Drug & Cosmetic INDUSTRY

NOVEMBER 1940

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The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer; Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass., U. S. A. Editorial and General Office, 101 West 31st St., New York, N. Y., U. S. A.

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THOMAS R. FARRELL, Editor
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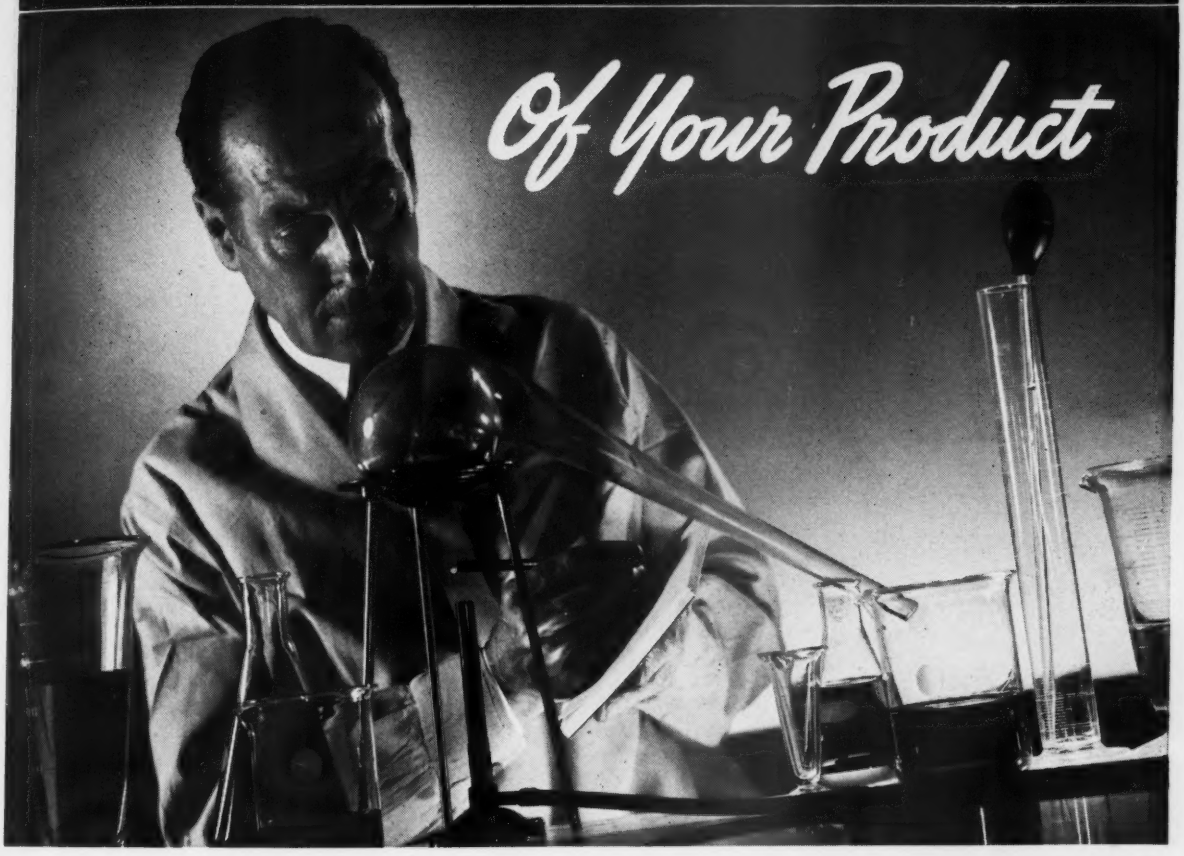
CHEMICAL ANALYSIS



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Chemical research forms a vital part of New England Tube Service. For, certain product ingredients react unfavorably to some or all metals.

Our competent research department serves as an effective safeguard against corrosion and capillary seepage (creep). It will subject your products to scientific chemical analysis and, without extra cost, establish the correct formula for tube metals. Or, if necessary, prescribe one of the extensive series of "VINICOTE" inner coatings for your tubes.

You are invited to take advantage of this and many of the other highly valuable services we offer to the buyers of our *world's TOUGHEST* (Sheffield Process) Tubes. A card or letter to our nearest office will quickly bring you experienced cooperation.

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NEW ENGLAND COLLAPSIBLE TUBE CO.

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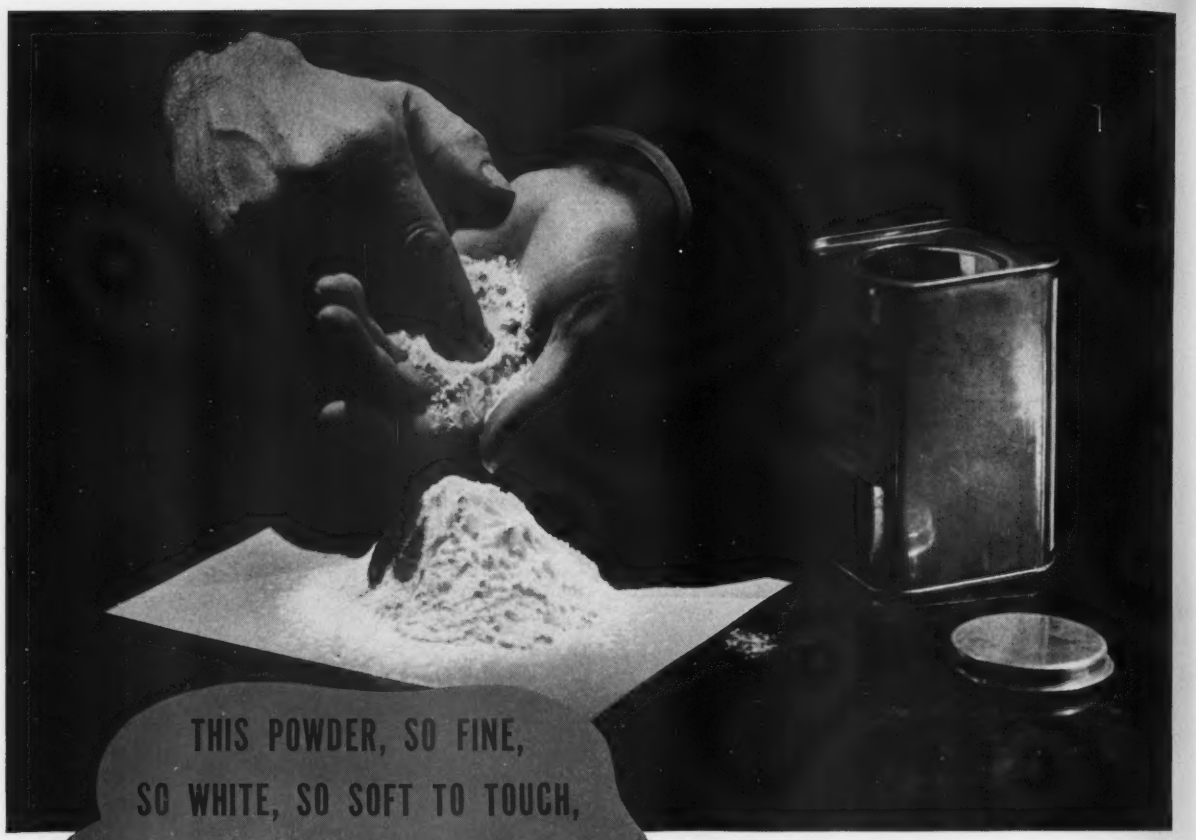
N. CAY MATTHIEU, 1965 PORTER ST., DETROIT, MICH. • THE WILCO CO., 7016 McKINLEY AVE., LOS ANGELES, CAL.
EXPORT DIVISION: 116 NASSAU STREET, NEW YORK, U.S.A.



THIS POWDER, SO FINE,
SO WHITE, SO SOFT TO TOUCH,
IS A
C-700 ALUMINA

When you see and feel these fine white powders, you will understand their importance as new basic ingredients for drug and cosmetic preparations.

To the touch they are remarkably soft and smooth, much like talc. Literally, no other white powder is available in particles so uniformly fine. In bulk the C-700 powders appear pure white, but actually each particle is translucent, so the material can be colored to any tint.

In chemical characteristics the four Aluminas of the C-700 series offer useful variations. All are neutral and stable hydrated Aluminas, but the more reactive types combine with weak organic acids, providing a convenient way to prepare many Aluminum compounds.

For samples which you can see and feel, write to ALUMINUM COMPANY OF AMERICA (*Sales Agent for* ALUMINUM ORE COMPANY) 1964 Gulf Building, Pittsburgh, Pennsylvania.

OTHER ALUMINAS USEFUL TO YOU:

Activated Alumina:

An adsorptive material, used in many pharmaceutical plants to provide dry atmospheres for handling deliquescent, effervescent, and difficult-to-dry materials. In powdered form, Activated Alumina can be used to adsorb odors, and it takes up considerable quantities of moisture with no caking.

Gelatinous Alumina:

The most reactive form of Alumina, available as a stiff, white, aqueous cream, suitable as a cosmetic or salve base.

ALORCO

ALUMINUM ORE COMPANY

ALUMINUM AND FLUORINE COMPOUNDS

KIMBLE GLASS VIALS

A Crystal Container for Every Purpose!

PATENT LIP VIALS ★ RE-SEAL-IT VIALS ★ APPLICATOR VIALS

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For A NEW VERSION OF YOUR *OLD* PACKAGE
A RAPID ACCEPTANCE OF YOUR *NEW* PRODUCT *Consult Kimble*

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NEW YORK • • CHICAGO • • PHILADELPHIA • • DETROIT • • BOSTON

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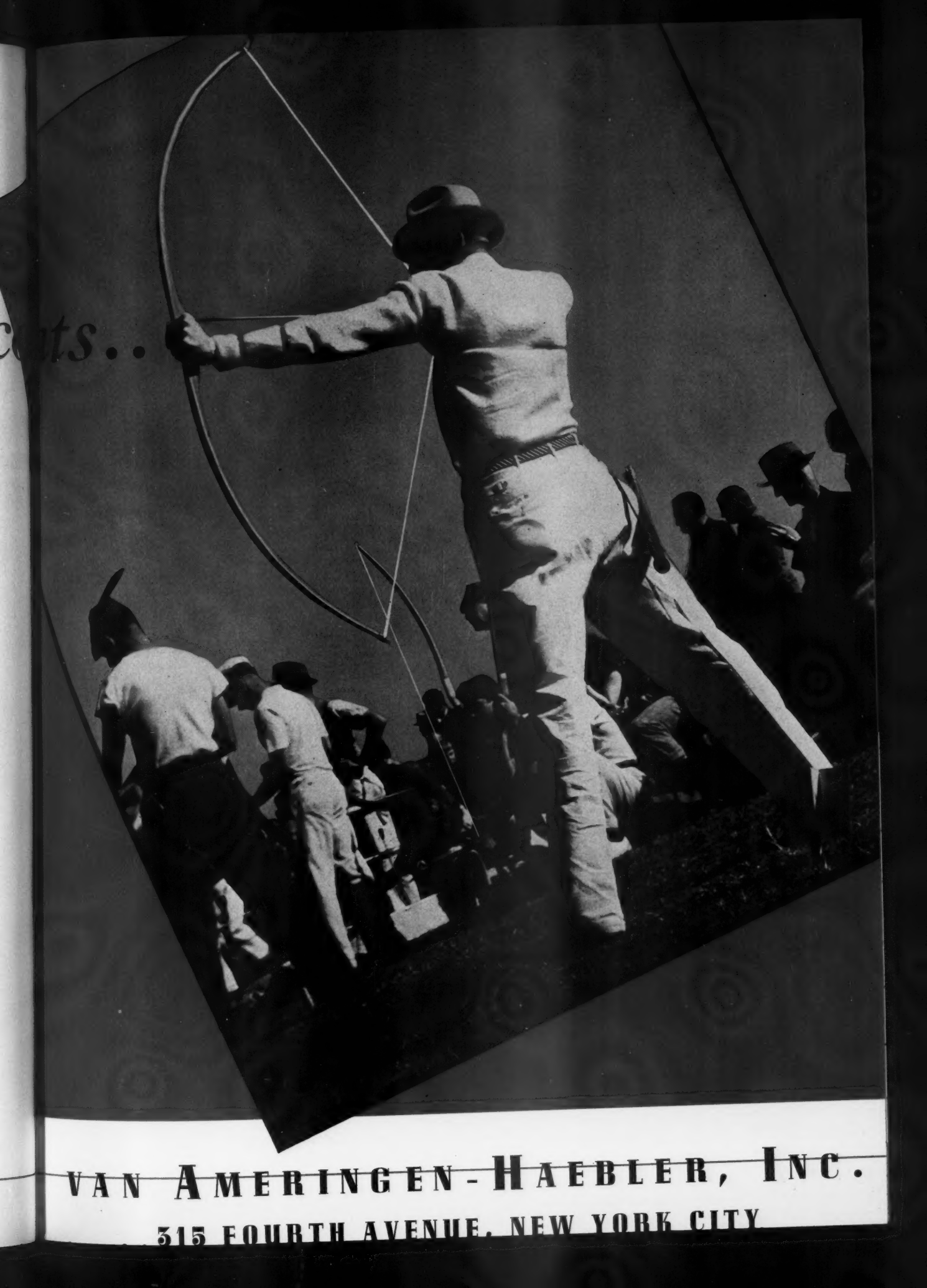
where ACCURACY c

To score consistently with the public, a good product must be uniform.

In the cosmetic field, uniformity not only means the use of standard quality raw materials, but also continuous accuracy in putting together the various components of the formula.

If you are using our perfumes you may rest assured that each shipment is just the same as the last. Strict accuracy in filling orders is not only a hard and fast rule with us, it is a habit.



VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVENUE, NEW YORK CITY

GATHERING

of BOTANICALS is an ART

Experienced natives gather and peel cherry bark for S. B. Penick & Company. The care with which successive crops of uniform quality have been produced by these experienced gatherers has been the basis of official drug standards.

S. B. PENICK & CO.

. . . occupies the unique position of being the only botanical miller and manufacturer to derive the majority of its domestic botanicals directly from the gatherers in the producing districts.

AVAILABLE FROM ONE RELIABLE SOURCE . . .

are Gums, Insecticide Bases, Crude Botanicals, Fish Liver Oils, Extracts, Alkaloids, Cosmetic Raw Materials.

. . . PASSED ON FROM GENERATION TO GENERATION OF PENICK GATHERERS

Through generations, Penick collectors have passed on to their families the art of medicinal plant collection and identification—knowledge of the right season to gather for a maximum of active principles, how to remove adhering soil, how to dry plants correctly. More than two hundred Penick botanical drugs are gathered in the beautiful Blue Ridge Mountains of North Carolina.

The gatherers bring the botanicals to the Penick warehouse at Asheville, North Carolina. Today over fifteen hundred natives gather roots, barks and herbs during the harvesting season. In the collection house, the materials are carefully hand picked, rewashed, graded and thoroughly dried. Curing is completed in open-air drying sheds. An experienced manager supervises each process through to the time the different grades and qualities are separated, and samples sent to Penick control laboratories for examination.

S. B. PENICK & COMPANY

132 NASSAU STREET, NEW YORK
1228 W. KINZIE STREET, CHICAGO

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

4 Brand New Packaging Ideas ready now to be put to work!

1. **Ping Pong Balls All Look Alike**—and that's all the more reason why a distinctive package is called for. In this one, eye-appeal, convenience and economy are cleverly combined.

2. **A Hatbox They'll Want To Take Home.*** Stores will like the display opportunities this *different* hatbox offers. Shoppers will like its smartness and utility. You'll like the healthy effect it will have on your sales!

3. **For Your Best Bourbon**—or Scotch, or Rye, or Irish. High-lighted behind a bar or on a liquor counter in this unusual container, your whisky can't help but attract more eyes and more sales. Try it as a new (and less expensive) way to get preferred display position.

4. **A Transparent Package For Umbrellas.*** Here is something to induce a retailer to bring an umbrella out of hiding and actually put it on display! Here's something to set *your* umbrella head and shoulders above competition.

* What are hatboxes and umbrella packages doing in Drug and Cosmetic Industry? Merely demonstrating Ritchie's ability to give *you* a unique, practical, sales-winning package — no matter *what* your field.

If you are interested in these or any similar packaging applications — if you are interested in any type of Transparent Package, Set-up Paper Box or Fibre Can — get in touch with Ritchie.

Whatever your packaging need, you can have all the advantages of Ritchie's money-saving manufacturing facilities, 74 years experience, and merchandising-minded design service. Write today and tell us your problem.

SET-UP PAPER BOXES
FIBRE CANS
TRANSPARENT PACKAGES

W. C. Ritchie AND COMPANY

8847 BALTIMORE AVENUE • CHICAGO

NEW YORK DETROIT LOS ANGELES ST. LOUIS MINNEAPOLIS DENVER MIAMI

BOTTLES *like these* *at practically* STOCK PRICES

Here are seven bottles of artistic and distinctive design which you can buy at practically STOCK prices. Although the actual bottles are not carried in stock, the moulds are already available and your order can be produced without involving any "special mould" cost.

In addition to these 7 designs, a number of other highly individual bottles are available on the same basis. Our representative will be glad to show you samples and quote on your requirements.

SWINDELL BROS., BALTIMORE, MD.

200 FIFTH AVENUE, NEW YORK

ROBERTO ORTIZ—HAVANA, CUBA

When you think of bottles think of

Swindell

*1923 PRESIDENT COOLIDGE IS INAUGURATED

*1923 *In 1923 Chas. Pfizer & Co., Inaugurated the First Commercial Production of Citric Acid from Native Raw Materials*

¶ Until 1923, citric acid was produced in this country from citrate of lime, which had to be imported from countries growing citrus fruits in quantity. It had long seemed to Chas. Pfizer & Co. definitely unfortunate that a constituent of so many domestic foods, soft drinks and medicinal products, should have to be produced from crude material controlled by a foreign monoply.

¶ After more than twenty years of painstaking research, Chas. Pfizer & Co. perfected in 1923, a new process for commercial production of citric acid from sugar.

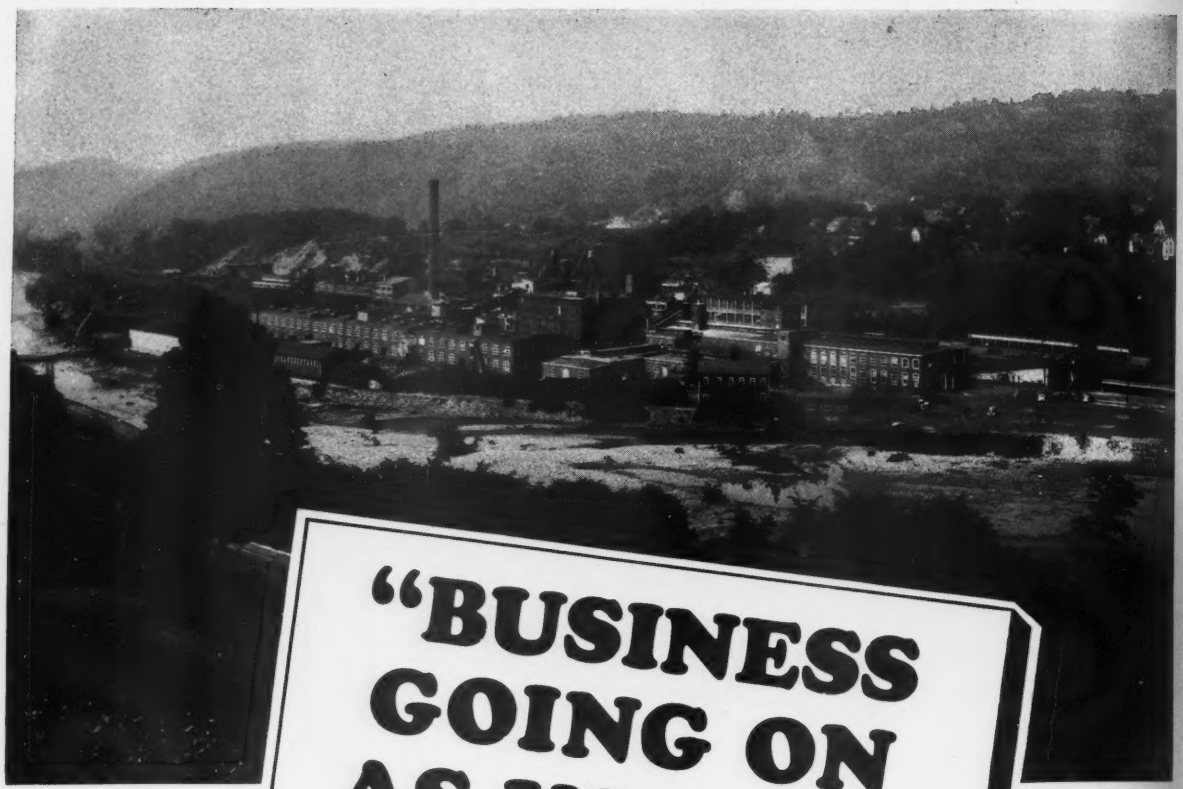
¶ The large-scale production of citric acid made possible by the Pfizer process resulted in higher purity, lower prices and expanding markets. New markets of promise for citric acid today include the plastics, plasters, adhesives, lacquers, inks, varnishes, and many more.

¶ This is only one of many notable achievements in the ninety year history of Chas. Pfizer & Co. that have made this firm's name known and respected throughout the world.

CHAS. PFIZER & CO. INC.

81 MAIDEN LANE, NEW YORK, N. Y. 444 GRAND AVE., CHICAGO, ILL.

MANUFACTURING CHEMISTS SINCE 1849



"BUSINESS GOING ON AS USUAL"

. . . despite the war!

Naugatuck's American-owned factory offers you many advantages. This large plant in Naugatuck, Connecticut, not only produces superior aromatics—but pioneers in the research of aromatic chemicals. They can also supply you with the finest of Basic Perfume Specialties, Essential Oils and Floral Products.

Now is the time for you to profit from the direct association with this "top flight" laboratory — right here in America—*where business is going on as usual.*

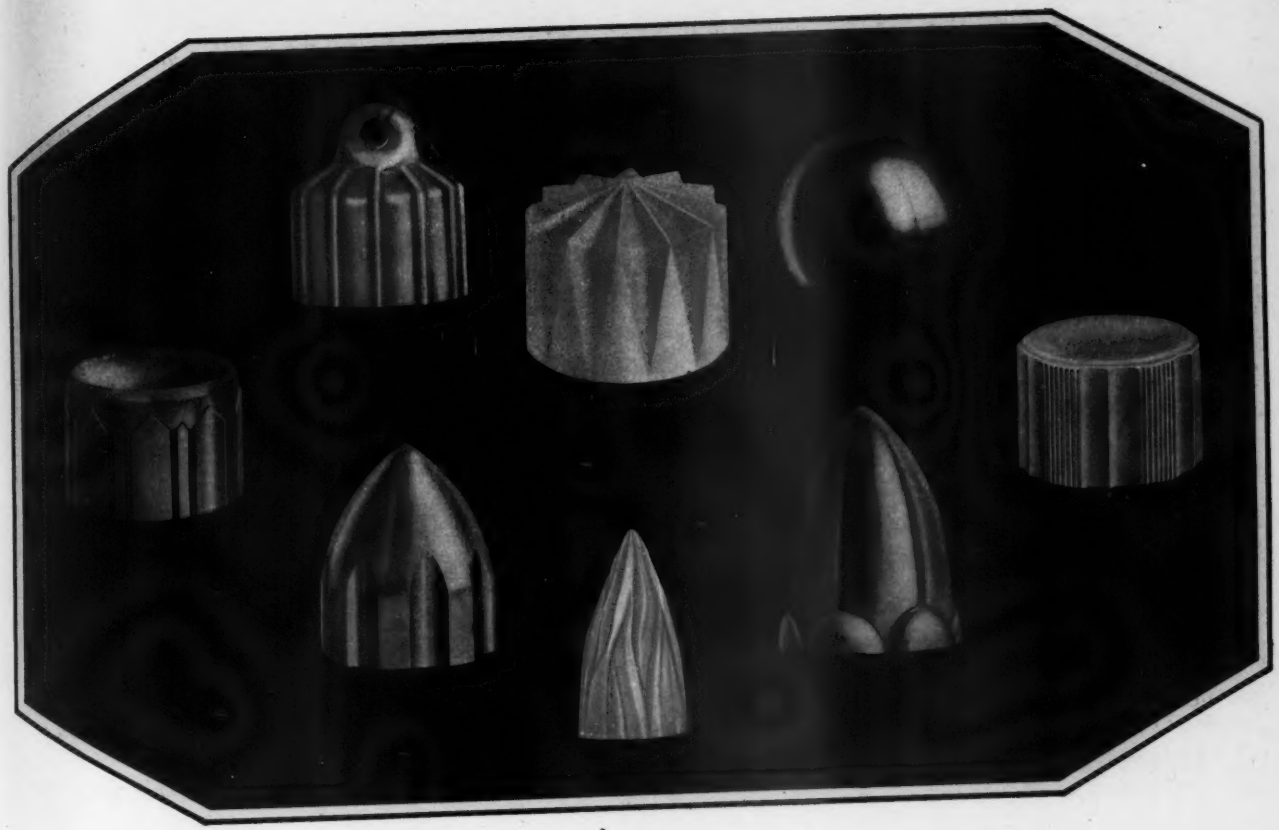
NAUGATUCK AROMATICS

DIVISION OF UNITED STATES RUBBER COMPANY

12 EAST 22nd STREET • NEW YORK, N. Y.

440 W. WASHINGTON STREET, CHICAGO, ILL. • H. M. ROYAL, Inc., 4814 LOMA VISTA, LOS ANGELES, CALIF.

CAPS



by

VICTOR

MOULDING DIVISION

VICTOR METAL PRODUCTS CORPORATION

200 DIAMOND STREET

BROOKLYN • NEW YORK

CAPS BY VICTOR

KING DESIGN

ALL G. C. A. SIZES

The color in which this cap is shown on other side of page is

VICTOR BLUE 26A

Prompt deliveries on black caps from large stocks.

ACE DESIGN

ALL POPULAR SIZES

The color in which this cap is shown on other side of page is

VICTOR BLUE 28

Requests for samples and prices will receive prompt attention.

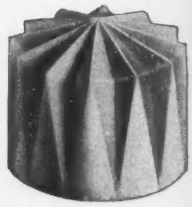
BALL CAP

10-425 — 18-410

The color in which this cap is shown on other side of page is

VICTOR GREEN 5A

All inquiries, regardless of size, will receive prompt attention.



DESIGN No. 70

8-425 — 10-425 — 20-410

The color in which this cap is shown on other side of page is

VICTOR GREEN 23

An example of Victor designing.

DESIGN No. 50

8-425 — 10-425

The color in which this cap is shown on other side of page is

VICTOR MAROON 11A

This cap can be supplied with a well for a glass rod.

TASSEL CAP

8-425 — 10-425

The color in which this cap is shown on other side of page is

VICTOR GREEN 4A

Submit your design problems to Victor.

FLAME CAP

8-425

The color in which this cap is shown on other side of page is

VICTOR RED 24

Technical skill developed thru moulding experience assures a satisfactory closure.

DESIGN No. 60

15—425

The color in which this cap is shown on other side of page is

VICTOR RED 2

A large stock of raw materials for all stock color shades, assures short-time deliveries.

The color shades referred to above and many others are shown by 10 m/m Ace design caps mounted on a stock color card. This card will be promptly mailed upon request.

MOULDING DIVISION

VICTOR METAL PRODUCTS CORPORATION

200 DIAMOND STREET — BROOKLYN • NEW YORK

EXPERIENCE *vs.* TARGET PRACTICE!

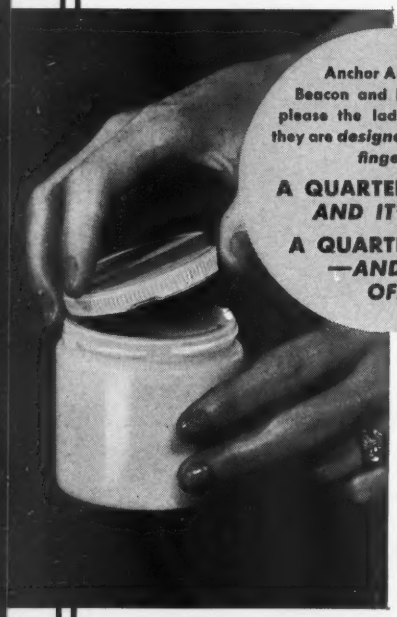
EXPERIENCE has trained "NATIONAL" eyes and hands to *bunch their hits* around Container style . . to perfect their aim on Sales-by-the-Package. ★ EXPERIENCE replaces target practice in the "NATIONAL" way of practical designing, introducing novel display features and turning out a superior craftsmanship. ★ "NATIONAL" Container Service joins smart ideas with Experience in Packaging to speed Sales. "NATIONAL" EXPERIENCE *replaces* TARGET PRACTICE!

NATIONAL CAN CORPORATION

EXECUTIVE OFFICES: • 110 EAST 42nd STREET • NEW YORK CITY

A COMPLETE *Friendly Service*

FOR USERS OF OPAL WARE


Anchor Amerseal, Beacon and Falcon Caps please the ladies — because they are *designed* for feminine fingers!
A QUARTER TURN— *AND IT'S ON!*
A QUARTER TURN —*AND IT'S OFF!*

ANCHOR HOCKING OFFERS YOU *COMPLETE* PACKAGE SERVICE

A COMPLETE ASSORTMENT OF CLOSURES—particularly recommended is the Anchor Amerseal Cap illustrated at left. Other attractive economical closures are Anchor NKCT Caps, Anchor Improved C.T. Caps, Anchor Molded Caps, Anchor Falcon Caps and Anchor Beacon Caps. We can advise you what type best fits your problem.

A COMPLETE RANGE OF OPAL WARE CONTAINERS—in all standard sizes, shapes and capacities.

A COMPLETE DESIGN SERVICE—If you need a special mold to give your package individual distinction our designers are qualified by skill and long experience to be really helpful. They'll give you a package that will catch and please the eye—*on the shelf, in the home and in your advertising.*

GLASS CAPS

ANCHOR HOCKING

-an unbeatable combination

● You'll find at Anchor Hocking a service that's complete, cooperative and friendly. You'll find that Anchor Hocking designers are happy to work hand in hand with your merchandise men to produce an outstanding package at low cost. You'll profit from buying opal containers *and* caps as matched units from *one* source.

Anchor Hocking's friendly, *complete* service is proving valuable to manufacturers of cosmetics and other purchasers of opal ware. They want a package that compels interest and stimulates the urge to buy—one that allures with appearance and style. Anchor Hocking can provide such a package for you—no matter what your packaging problem. Whether you make a selection from stock or use a private mold, you'll have a package with unity of design—a perfect fit of container and cap. You'll save time and expense. The responsibility for an efficient seal will be fixed with the supplier. And you'll have a package that will help move your product from the counter to the home.

Let Anchor Hocking's long experienced years work to *your* advantage. Your Anchor Hocking man has a tried, practical and progressive organization behind him. Call him or write us TODAY.

ANCHOR HOCKING GLASS CORPORATION
Lancaster, Ohio

Closure Subsidiary: ANCHOR CAP & CLOSURE CORPORATION
Lancaster, Ohio, Long Island City, N.Y., Los Angeles, Calif., and Toronto, Can.

THEIR FACE POWDER MUST "CLING"

Many are the qualities needed for a successful face powder—smoothness, color, fragrance—but one of the most important is its "clinging" property. Regardless of individual preferences for other characteristics, the product which merits consumer acceptance and name-call is the one that "clings" for hours.

Leading manufacturers of "demand" face powders incorporate this sales-building feature by using Merck Zinc Stearate U.S.P. This exceptionally smooth, free-flowing, *white* powder has excellent adherent properties and unusually fine "slip". It is free from gritty or harsh particles, and from foreign or rancid odor.

Merck Zinc Stearate U.S.P. is made only from the finest quality TRIPLE-PRESSED Stearic Acid. This excellent product meets the requirements of the United States Pharmacopoeia and contains *not* more than 20 parts per million lead and *not* more than 2 parts per million arsenic.

Our Chemical Service Department will gladly discuss with you the sales advantages of incorporating Merck Zinc Stearate in your face powders, creams and other products.

Write today for a sample of Merck Zinc Stearate and further information

MERCK

MERCK

FINE CHEMICALS FOR THE PROFESSIONS AND INDUSTRY SINCE

★ 1818 ★

MERCK & CO. Inc. *Manufacturing Chemists* RAHWAY, N. J.

NEW YORK PHILADELPHIA ST. LOUIS In Canada: MERCK & CO. Ltd., MONTREAL and TORONTO

Most every modern woman keeps on hand several varieties of perfumes and cosmetics. But when traveling she is apt to take the one she values most highly—for its all round good quality and high distinction. To make a line of products she calls her "good traveling companions" requires experience, skill and the careful selection of materials. Givaudan's special knowledge of odors and their uses will serve you in good stead in creating such a line. And Givaudan's high quality odors and specialties will help maintain the distinction that means sales and re-sales. Our staff has developed these specialties to help you build up new and remarkably original effects. The facilities of the Givaudan laboratories are at your disposal.

GIVAUDAN-DELAWANNA, INC. · 330 WEST 42ND STREET · NEW YORK

YOU CAN BE CERTAIN WITH

Cetyl Alcohol Pure

THE most important element in cetyl alcohol is *purity.* Givaudan safeguards this element by the strictest methods of production control that have yet been developed. Here are the reasons why Givaudan's Cetyl Alcohol *Pure* is unquestionably superior for use in creating uniform, high quality cosmetics:

1. Cetyl Alcohol Pure absolutely will not irritate the most sensitive skins.
2. It has no foreign by-odors.
3. Its color is pure white.
4. It contains no palmitic acid or other impurities.
5. It will give the skin a pronounced satiny finish.
6. Cetyl Alcohol Pure has therapeutic value and is absorbed and obstinately retained by the epidermis (U. S. Dispensatory).
7. It is decidedly emollient.
8. It is a uniformly solid material.
9. It is made entirely from spermaceti.
10. It assists materially in stabilizing emulsions.

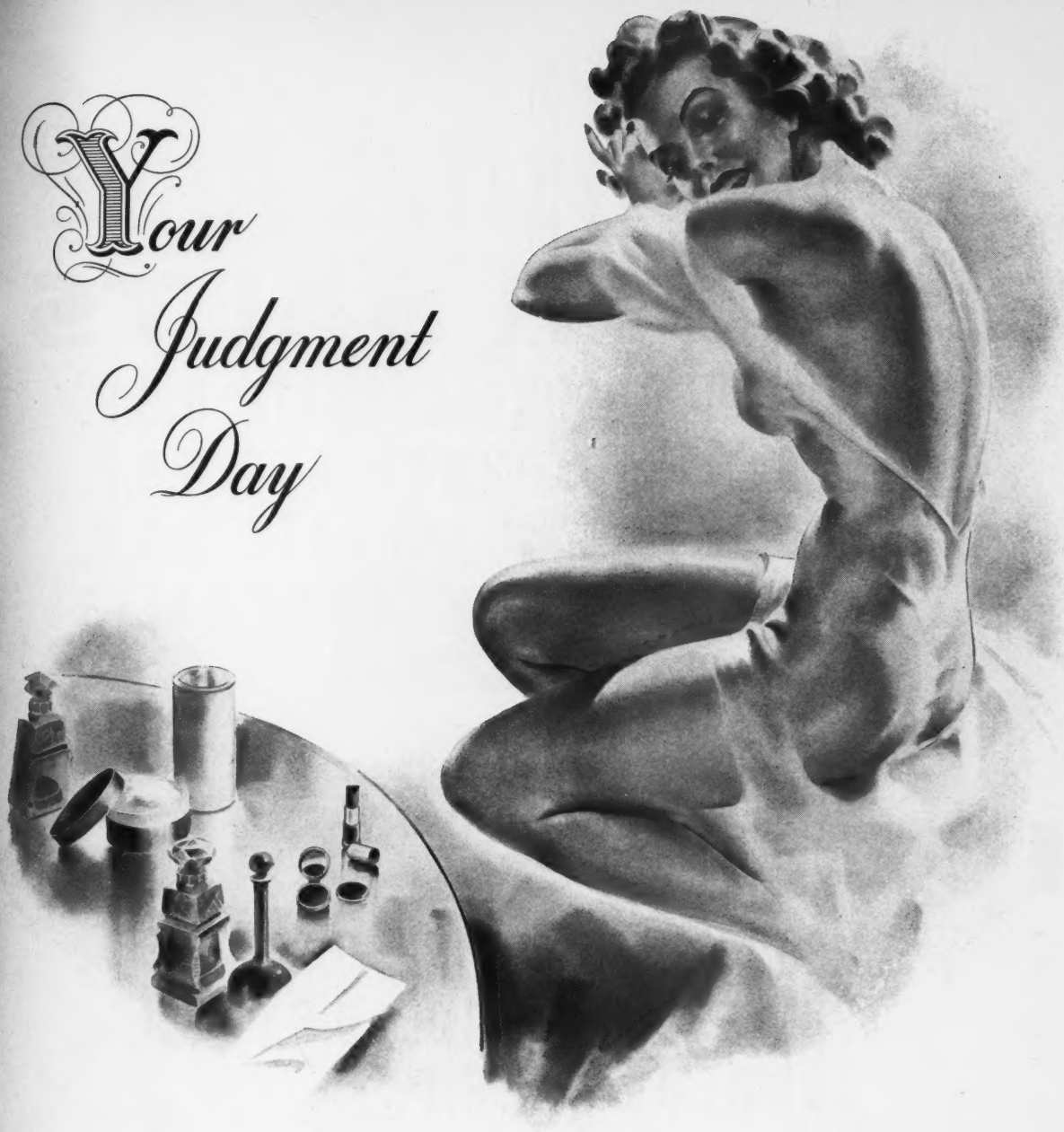
GIVAUDAN

DELAWANNA INC.

330 WEST 42nd STREET, NEW YORK, N. Y.

Branches: Philadelphia Los Angeles Cincinnati Detroit Dallas Baltimore

Your Judgment Day



Your *Judgment Day* comes, not once in an Eternity, but every day—in my lady's boudoir. Through her discriminating use, your cosmetics and toiletries will be *judged.* They will not be found lacking in flattering color, seductive fragrance, enhancing formula, or smart packaging, if you have them manufactured by Allied.

LIPSTICKS APLI • ROUGE SUPREME • FACE POWDER APLI • MASCARA APLI • EYE SHADOW APLI
OTHER ALLIED SPECIALTIES: TALCUM POWDERS • DUSTING POWDERS • FACE POWDERS
PERFUMES • TOILET WATERS • SACHETS • MANICURE PREPARATIONS • CREAMS • LOTIONS
DEODORANTS • DENTIFRICES • BATH SALTS • SHAVING PREPARATIONS • SKIN TONICS
HAIR AND SCALP PREPARATIONS

ALLIED PRODUCTS, Inc. • 30 ROCKEFELLER PLAZA, N. Y. C.

MAKERS OF THE WORLD'S FINEST COSMETICS AND TOILETRIES • PRIVATE BRANDS EXCLUSIVELY
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AND OTHER BISMUTH SALTS

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AND OTHER IODIDES

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Stafford Allen & Sons Ltd.,
LONDON, ENGLAND

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PATCHOULY
PEPPERMINT
SANDALWOOD

The Markets of the world accord highest honors to these valuable distilled oils

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INDOLINE

Not a substitute for INDOL but a product superior in

LASTING QUALITY
SWEETNESS and
PERFUME VALUE

Please Write for Free Sample

Norda

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ST. PAUL: 253 E. 4TH STREET
HAVANA, CUBA: SAN LAZARO #671
CANADA: 119 ADELAIDE ST., W. TORONTO
135 COMMISSIONERS ST., WEST, MONTREAL
ENGLAND: 17 CREECHURCH LANE, LEADENHALL ST., LONDON, E. C. 3

USE THE *Color* THAT ATTRACTS MORE CUSTOMERS

USE COLOR to draw attention to your product. Clinch more sales—by making the color *Maryland Blue*. There's something about the rich, royal look of Maryland Blue glass that tells Mrs. Shopper: "Here's a product of *true blue* quality and dependability—a product well worth your money." Blue builds confidence—and confidence builds sales. Above are four of many distinctive Maryland Blue stock designs, all available in a wide range of sizes. They are (from left to right) the Squat Jar, 1/2 oz. to 18 oz., Cabinet Square, 1/2 oz. to 32 oz., Chesapeake Oval, 4 oz. to 32 oz., French Square, 1/4 oz. to 16 oz. Send for samples today. Also available in crystal clear Maryland Flint.

PACK TO ATTRACT IN

Maryland Blue

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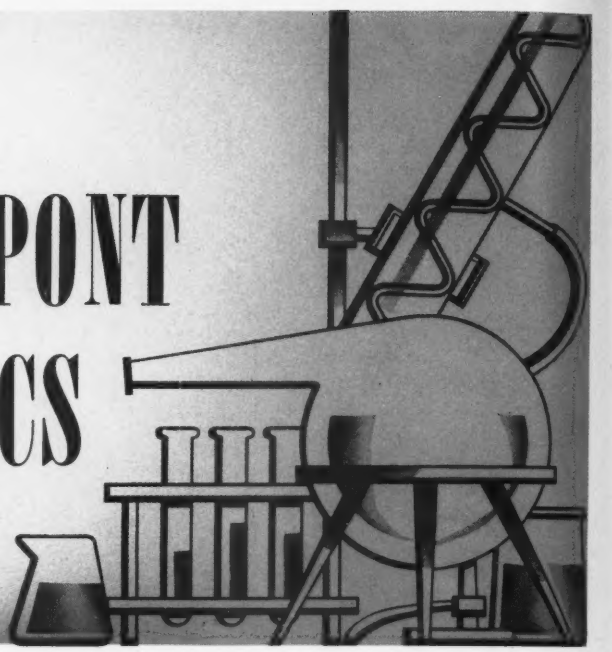
2 NEW DU PONT SYNTHETICS



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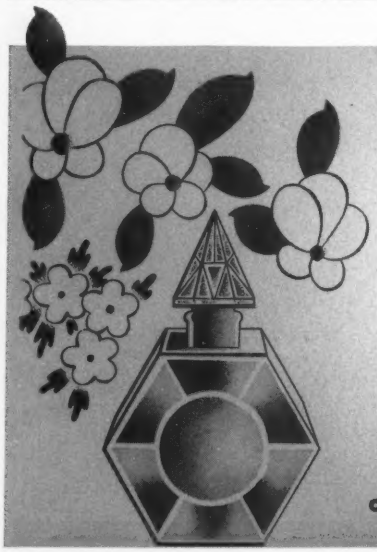

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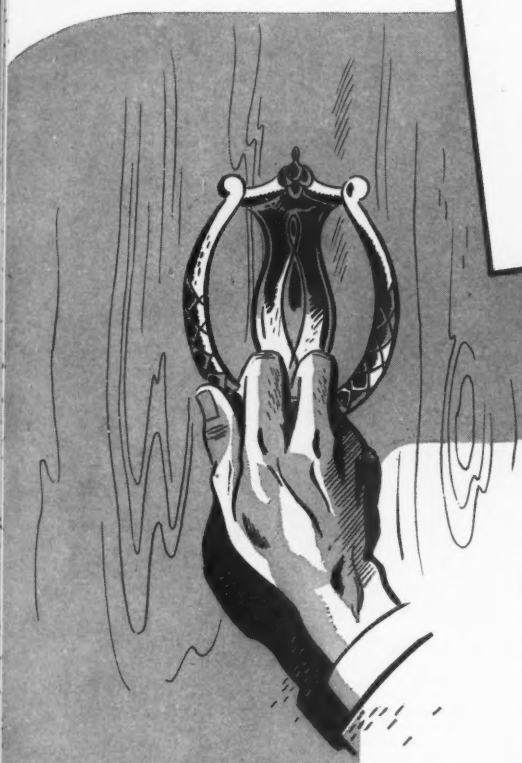

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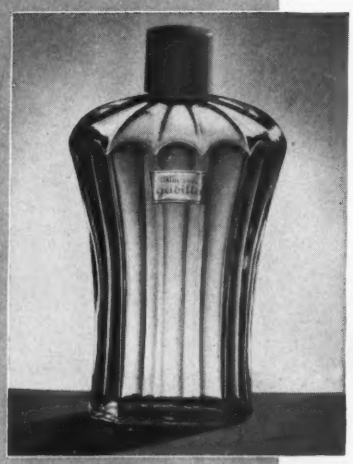

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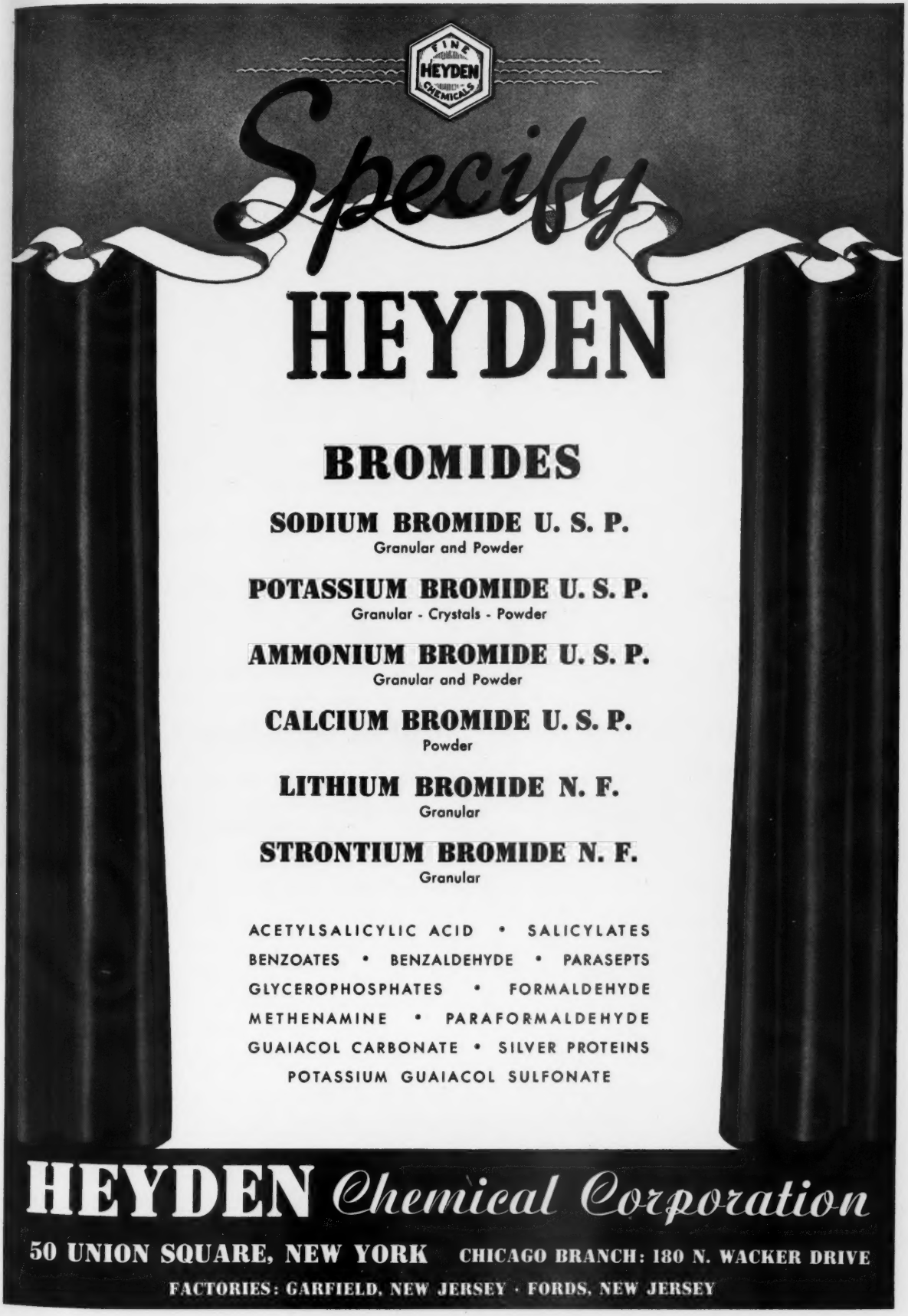
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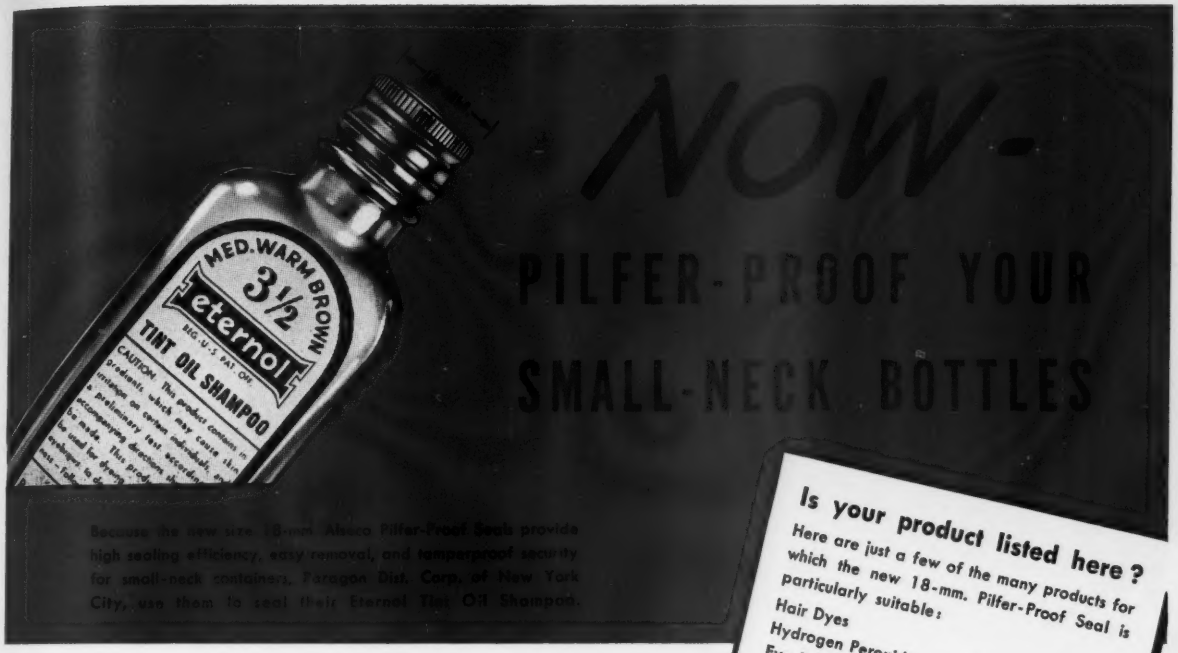
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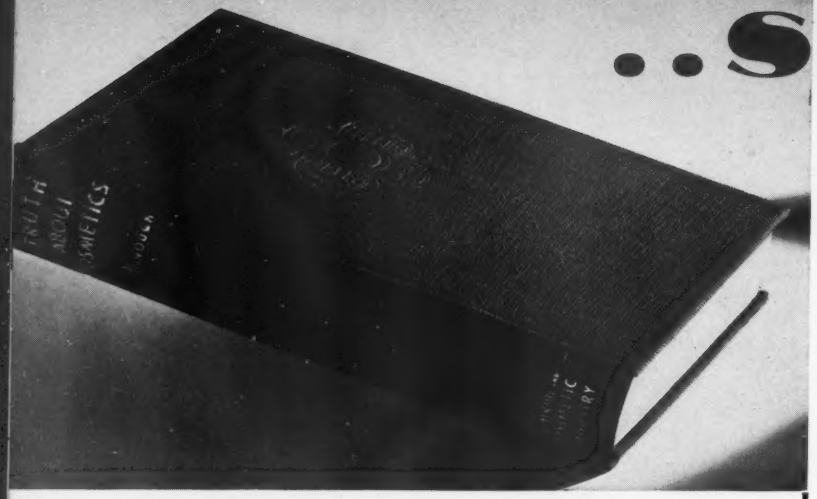

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by

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1 Benefits of Cosmetics
2 History of Cosmetics and Perfumes
3 The Skin
4 The Skin, *Continued*
5 Allergy
6 Cosmetic Dermatitis
7 Romance of Cosmetic Raw Materials
8 Cosmetic Colors
9 Cold Cream and All-Purpose Creams
10 Creams and Lotions
11 Foundation For Make-Up
12 Make-Up Preparations
13 Face Powders
14 Acne and Preparations
15 Pigmentation and Surface Stain Preparations
16 Nails, Hands and Arms
17 Hair Dyeing
18 Other Hair Preparations
19 Superfluous Hair Removal
20 Permanent Waving of Hair
21 Permanent Waving Solutions
22 Scalp Disorders
23 Oral Preparations
24 Sweat Glands and Preparations
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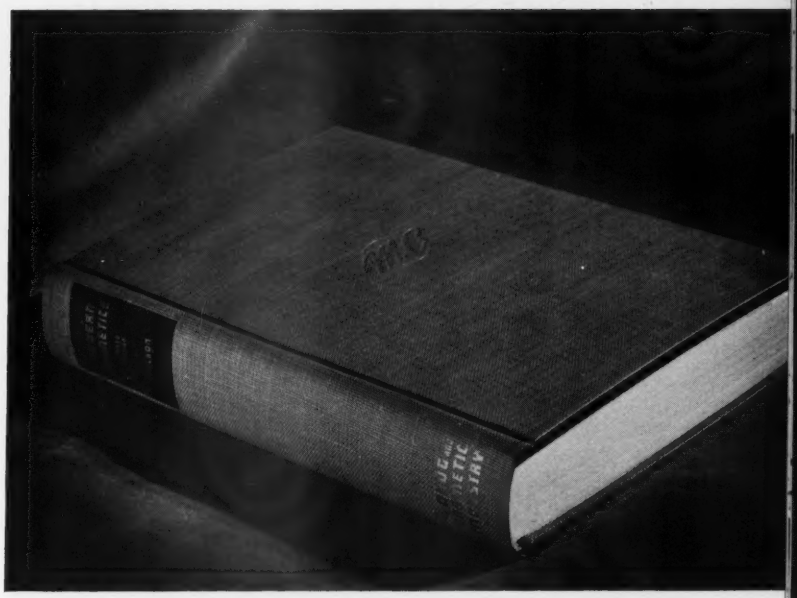

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5. Toilet Powders
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18. Acne, Blackhead, Eczema Creams
19. Scalp Ointments
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25. Packaging Creams and Pastes
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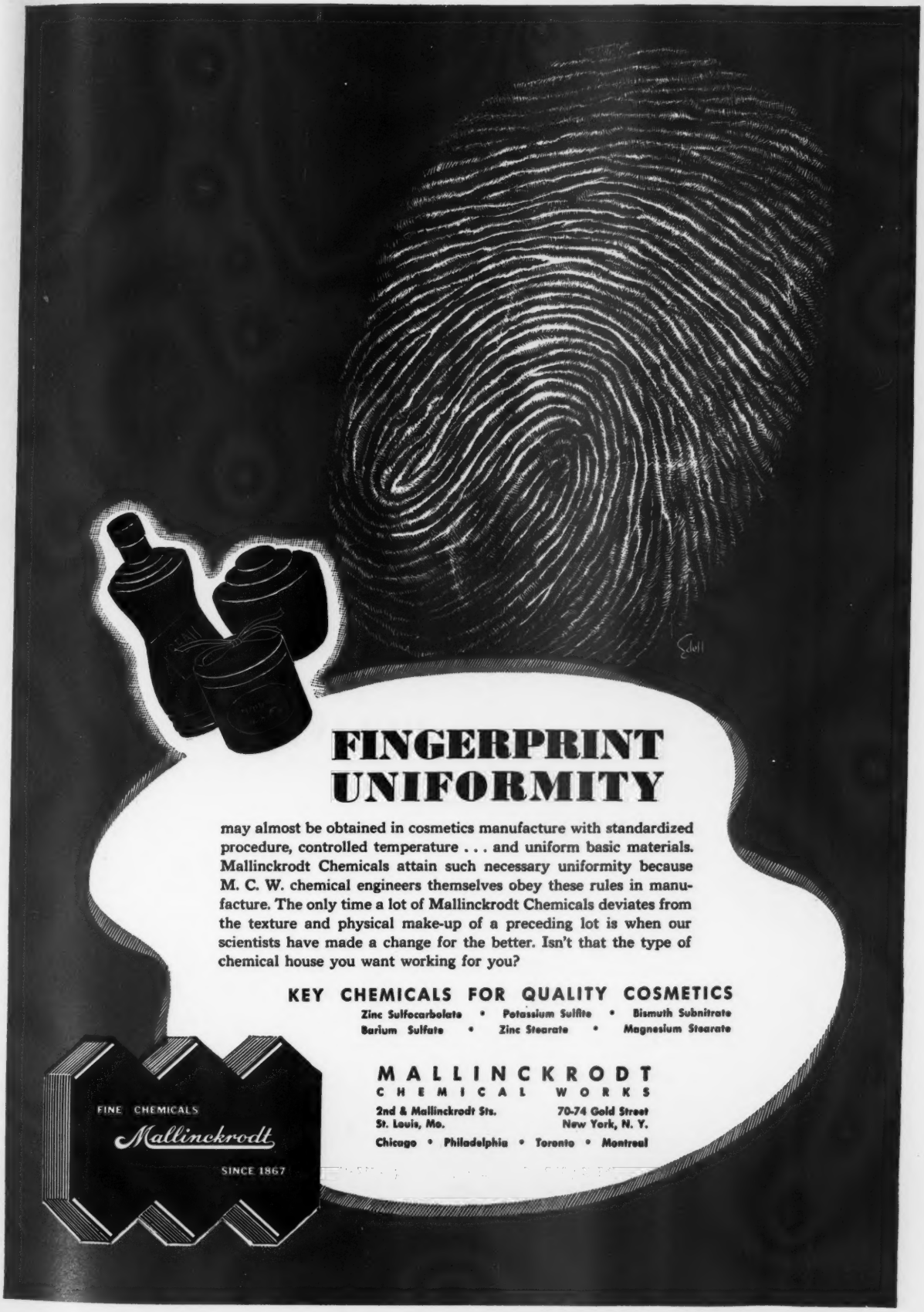
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U.S.P. IN DEFENSE

With the nation well along in a real study of the resources of the country from the point of view of defense, it is time that those responsible for the official compendia through which the official medicinals of this nation are controlled gave attention to the serious problem that might face them. While it is true that, at the moment we are adequately prepared to produce all the preparations for some time to come, the time might come when we would have to change our ways quite radically in respect to many items.

Great Britain has recently had to make a restudy of the British Pharmacopoeia with a view of eliminating a large number of items that were imported but were considered non-essential under present conditions. So long as we are rearming in advance of a possible conflict, we should tackle this problem now so that we could do the work properly when we have time, and not be rushed in this work when we are already engaged in conflict.

The Government, through its war resources study has been working since the last war to build up its knowledge of what was available from industry in the event of a conflict. Because of the many years of experience in this respect, the present rearming program is a comparatively simple task than it would otherwise have been. If the drug manufacturers knew what conditions would be in the event of conflict, the changes could be made with the least possible difficulty and with the greatest possible speed.

The information necessary to outline the changes which would have to be made in the event of war is not difficult to obtain. This information could easily be applied to solution of the problem that would arise if defense were necessary, and then the industry could know just what steps it could take to keep adequate supplies of products moving.

DOMESTIC RESOURCES

In this issue we are chiefly concerned with the raw material and chemical resources of the United States. Those other goods which this industry requires—packaging materials and equipment—are not substantially affected by our isolation from a considerable part of the world. But other resources, such as accumulated stocks, and intangibles such as our research ability and technical facilities to meet emergencies, as shown by our whole chemical history, are an important part of this issue.

A study of our raw material resources brings to light many confusing situations. Are we completely dependent upon imports from an isolated area for any particular material? Is this area the actual primary producer or the factor controlling distribution? Can other favorable countries producing small amounts be encouraged by substantial purchases here to increase production in time to meet our needs? What materials are produced in the United States and what products are potentially capable of being produced here? Above all, what products, in all fairness, warrant capital investment and should be encouraged for domestic production?

The subject "Domestic Resources" lends itself readily to a sentimental approach. For the past year or two, our mail has been loaded with requests for information from people in many walks of life who see romance or golden profit opportunities in the cultivation of plants for botanical drugs or for the aromatic oils used in perfumery. It would be a disservice to this industry and to the many people who are sincerely and practically interested in strengthening our domestic economy to present the material we have gathered as an inspirational crusade to make America independent in botanical drugs and perfume materials. This is not our intent. We do not believe such a broad program has any practical hope of success nor that it is economically desirable in the long run. But the time is opportune to examine this subject realistically to discover what work has been done here; what pioneers are already exploring these possibilities in cultivation, in distillation and extraction of natural materials this trade uses; and which ones offer practical hopes for success.

The articles that follow are an attempt to present this picture. The material here has been gathered after considerable correspondence with State pharmaceutical colleges, agricultural experimental stations, universities, the Department of Agriculture and many individuals. Where we have failed to recognize a venture in this field, it is either out of consideration for a project so experimental that publicity would be embarrassing to the owner, or because of an ignorance which we sincerely hope some reader will correct for future issues.

Because of the great interest in this country in the cultivation and extraction of medicinal plants and in the cultivation and distillation of aromatic plants, it is timely, we believe, to discuss briefly some of the factors that enter into such a project. They are complex and not

often understood. It is not enough to say, as was recently expressed at a meeting of American wine producers that somewhere in the United States is every conceivable combination of soil and climate to produce any grape for any wine.

We know that there are factors in soil and climate beyond those understood today that have great effect on the drug potency of the plant or on the odor characteristics of the extracted essential oil. We know that the odor of lavender not only varies widely in plants cultivated in different countries but that it sometimes varies on different sides of the same hill; that a plant transferred to a different country will revert in a few years, losing the original character of the oil, taking on a new character from its new home.

We know that cultivation of the bergamot fruit has been limited by some whim of nature to the southern tip of Italy on the straits of Messina despite many efforts to produce the oil in other countries and that only in recent years has an hospitable soil and climate been found in SouthAmerica.

One of the most romantic and interesting stories of Nature is the story of Nature's selective hospitality to plant life. In it lie many hidden secrets of soil and climate. We know only that all over the world Nature richly endows certain of its guests with its abundance for producing food, drug potency, or aromatic fragrance. Others, for no reason which man can understand, she rejects outright or, receiving them, withholds the essential thing which is the natural purpose of the plant.

It is true that in this country we have many varied combinations of soil and climate. We have places hospitable to certain drug and aromatic plants this industry needs. But, before proceeding with too much assurance in new plant cultivation, we need experiment, or experience from wild growth, to assure us that the quality and quantity of the extraction will meet commercial needs, that the plant will encounter no unexpected setback, as from disease—only one of the many unexpected factors of delayed inhospitality which has proved so discouraging here in certain experiments.

There are unquestionably aromatic and medicinal plants which can be developed in this country into a commercial success. But this success will not be obtained by headlong enthusiasm. For most of these ventures a long period of study of plant adaptability and plant breeding for drug or odor content will be necessary.

But these purely agricultural problems present only part of the picture. Fully as complex and as varied are the shifting economic factors of this worldwide industry supplying America with its requirements for medicinal and aromatic plants and extracts. If we examine the conditions under which these products are produced we may reduce them to two broad classifications. 1. The industry is scattered in places all over the world which by natural selection have proved most suitable for the plants. In some places the growth is wild, in others there are old existing plantings which have long ago been written off. In the growing, harvesting and distilling of these plants whole families may participate. Labor and capital investment is at a minimum. The characteristics of this group are: extreme market fluctuations, affected by prices of other local products, world conditions, etc. Family labor can at any time abandon the crop for other work.

2. This is a modern scientific, agricultural industry. Here the set-up is a centrally located plant for distilling or extraction, a variety of

(*Continued on page 533*)

We feel sure that many interesting facts and opinions concerning our "Domestic Resources" are to be found among our readers. We should like to hear from such readers and should like to continue the discussions, started in this issue, with their help. Let's hear from you.

A S I A
NORTH
PACIFIC OCEAN
AUSTRALIA
BLACK AREAS indicate places from which no goods can be obtained.
GRAY AREAS indicate places from which shipments are uncertain but not impossible.
WHITE AREAS indicate places to which trade is still open.

The following table is published with the full realization that rapidly changing world conditions may, by the time this issue reaches you, be misleading.

ESSENTIAL OILS

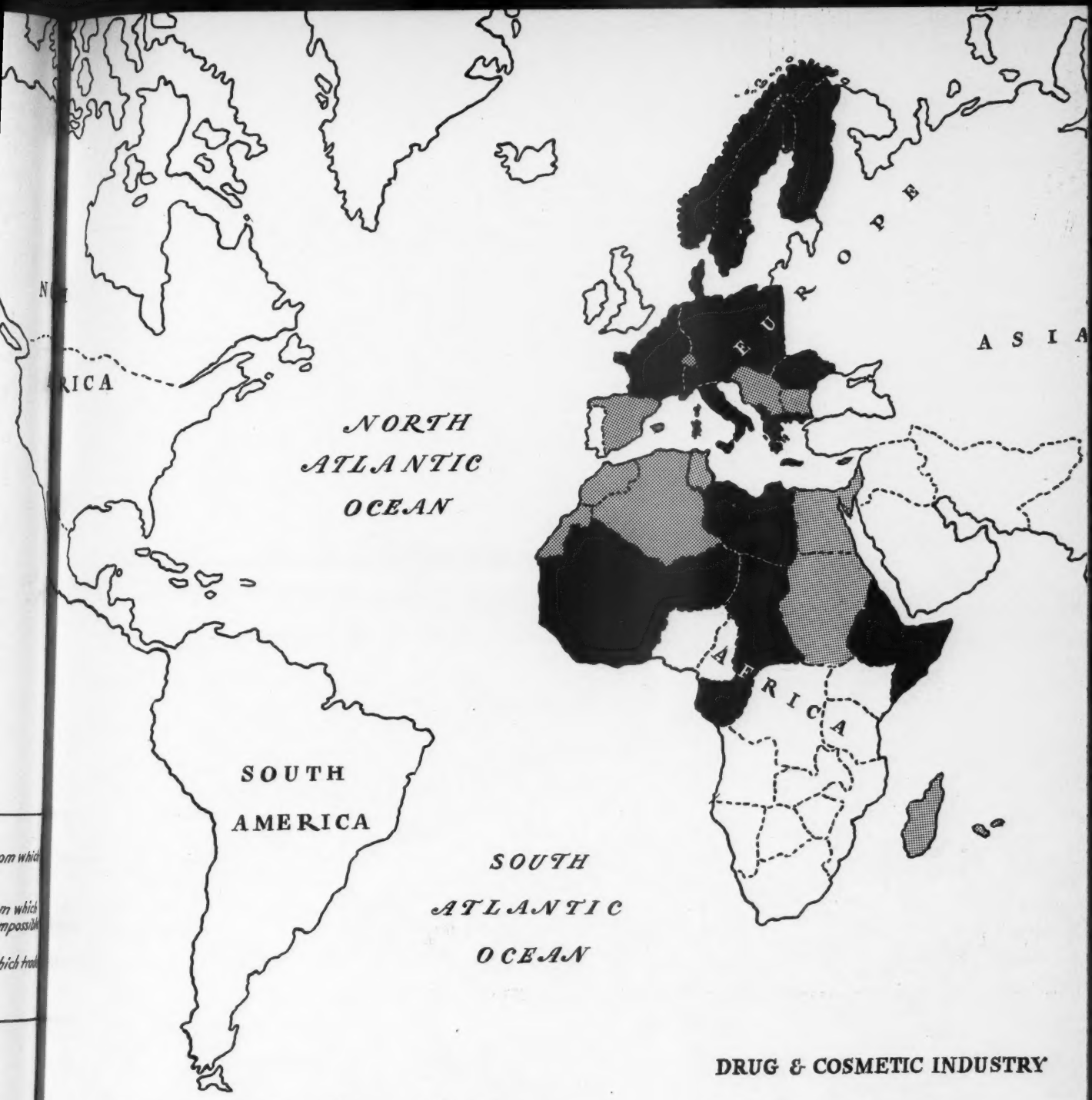
Subject to Economic Blockade (From Black Areas on Map)

Almonds, Bitter
Almonds, Sweet
Angelica Root
Angelica Seed
Basil, Reunion, Sweet
Bergamot
Broom
Calamus
Caraway Seed, Dutch
Cassie
Celery Seed
Chamomile
Clary Sage
Cloves, Madagascar
Cognac
Dill Seed, Dutch
Estragon
Fennel, Sweet
Geranium, Algerian
Geranium, Bourbon
Hyssop
Jasmin
Jonquil
Juniper Berries
Labdanum
Lavandin
Lavender
Lemon, Italian
Lovage
Mandarin
Mimosa
Myrrh
Narcissus
Neroli
Oppoponax
Orange Flower
Orange, Italian
Orris
Parsley Seed
Petitgrain, French
Pinus Pumilio
Pinus Silvestris
Rose, French
Tuberose
Vanilla Beans, Bourbon
Vetivert, Bourbon
Violet
Ylang Ylang, Bourbon
Ylang Ylang, Madagascar

ESSENTIAL OILS

Future Supplies Doubtful (From Gray Areas on Map)

Cade
Croton
Labdanum, Spanish



DRUG & COSMETIC INDUSTRY

Marjoram, Sweet, Spanish
Musk Tonquin
Myrtle, Spanish
Olibanum
Orange, African
Orange, sweet, Spanish
Rose, Bulgarian
Rosemary
Rue
Sage, Spanish
Star Anise
Thyme, Red
Thyme, White

ESSENTIAL OILS

Safe from Economic Blockade (From White Areas on Map)

Ambergris
Ambrette Oleo Resin
Ambrette Seed
Apricot Kernels
Balsam Copaiba
Balsam Tolu
Bay Leaves
Benzoin
Benzoin Oleo Resin
Birch, Sweet
Bois de Rose
Cajeput
Cananga, Java
Cardamon
Cascarilla
Cassie
Castoreum
Cedar Leaves
Cedarwood
Cinnamon
Citronella, Ceylon
Citronella, Java
Cloves, Zanzibar
Dill Seed, East Indian
Dill Weed
Elemi
Erigeron
Galbanum
Gaultheria
Geranium, East Indian (Palmarosa Oil)
Geranium, Kenya
Ginger
Hemlock
Lemon, Californian
Lemongrass
Limes, West Indian
Linaloe, Mexican
Mace
Mexican Vanilla Beans
Nutmeg
Orange, Californian
Patchouly
Peach Kernels
Pennyroyal, American
Peppermint
Petitgrain, South American
Pimenta Berries
Pimenta Leaf

COURTESY STAFFORD, ALLEN & CO.

HARVESTING BELLADONNA IN ENGLAND

BOTANICALS

The data contained in this article was collected during many months of correspondence. The subject is of vital interest to many in the trade and to others associated with it. It is our intention to continue our interest in this subject and to publish, from time to time, more things of interest as we hear of them. We welcome correspondence from anyone having knowledge of developments along this line.

THE story of botanicals is the story of the war in all of its ramifications. At the present time, as during the World War period, attention is being directed to domestic sources.

About three hundred different botanicals are produced in the United States, practically every state in the Union producing one or more. Some of them, particularly golden seal, wild cherry and ginseng, are found in almost every section of the country, while others, such as cascara, senega and lobelia, are confined to limited areas.

By far the greatest volume is produced in a very small area embracing that section of the States known as the "Blue Ridge" country, located in the mountains of western North Carolina. Other parts of the country are also rich in medicinal plants but collection is not so well organized as in the South.

There are also many other botanicals indigenous to the United States which, although available in commercial quantities, have never been exploited. The extent to which medicinal flora is available here is graphically illustrated by "A Survey of the Wild Medicinal Plants of the United States, Their Distribution and Abundance," compiled by the Committee on Pharmacognosy and Pharmaceutical Botany, Division of Biology and Agriculture, National Research Council. The purpose of this survey is to provide a reference to the location of natural domestic sources of botanical drugs in periods of national emergency, to lay a sound foundation for future work in medicinal plant breeding; and to reestablish in this country those useful species that are rapidly disappearing. This survey was started in 1937. Although it is still in its infancy, the following states have already been investigated and medicinal plant species indicated by counties: Vermont, New York, New Jersey, Pennsylvania, Maryland, West Virginia, Virginia, North Carolina, Tennessee, South Carolina, Florida, Maine, Georgia and Oregon. Eventually, it is hoped, every county in every state of the Union will be covered by this survey with the net result that every botanical specie containing medicinal qualities will be charted and the quantities available recorded.

In spite of the great variety of botanical drugs available here, the United States is still dependent on many foreign countries for important items not indigenous to this country. Because of the varied climate, soil, and other geographical factors, it is possible to grow under cultivation in the United States most, if not all, of the various botanicals which are now found only in foreign countries.

It is not, however, the intention of this article to raise any false hopes that the United States will soon, or ever, become entirely self-sufficient in regard to botanical drugs. The problems confronting such a great task are known, are many, are varied, and, in some respects, almost insurmountable. Its purpose, rather, is to make known to the industry the experimental work which has, and is now being done throughout the land, in an endeavor to produce botanical drugs which have always been supplied by foreign countries.

The rapid decline in the imports of such important botanicals as digitalis, henbane, and belladonna with the beginning of the World War in 1914, led to the most active period in medicinal plant culture in our history. Not only were individuals attracted to this

SORTING MA HUANG IN CHINA

enterprise by the high prices of these drugs but manufacturers of medicines resorted to their cultivation to assure themselves of the necessary supplies. Some of the drug manufacturers had experimented for years with such plants and, consequently, had a valuable background of experience. The literature of the period and unpublished reports show that such companies grew digitalis, cannabis, belladonna, and henbane in Minnesota, Michigan, Indiana, New Jersey, and Pennsylvania. In most cases several acres of these plants were under cultivation. With the return of normal prices after the war those activities were largely discontinued but the growing of digitalis is being continued by some of these firms. Apparently this drug can be grown to better advantage than the others, perhaps because a drug of more uniform potency is thus assured. Cannabis appears to have been a rather satisfactory crop and several of these firms report having grown this until recent years.

Near Richmond, Virginia, a drug farm was started in 1916 after several years of experimenting. There were six acres of digitalis and smaller acreages of cannabis, belladonna, and stramonium, also small plantings of catnip, wormwood, calamus, and orris root. Only digitalis, which was yielding about 1,000 pounds per acre, was continued after 1916 and is still being grown there.

Among the incorporated groups who were attracted to medicinal plant culture in that same period were two that were not manufacturers of pharmaceuticals and who, therefore, did not provide their own market, yet they were the largest producers. In Virginia, near Washington, D. C., a company was organized for that specific purpose and continued in business from 1915 to 1920. During the period of its greatest activities this company had under cultivation 15 acres of belladonna, 10 acres of digitalis, 10 acres of cannabis, and 5 acres of sage. There was also 1½ acres of woodland planted to ginseng and golden seal but nothing was realized from these. During the period that imports were restricted, the company realized good prices for belladonna, digitalis, and sage, but those interested in the project declared that overhead expenses and general operating costs in that region were too high to permit sustained profitable cultivation of these crops even at wartime prices except on a large scale.

During this period of high prices belladonna seems to have aroused the interest of more people than any of the other plants mentioned. In addition to those cases already mentioned, there were many individuals in various parts of the country who grew belladonna exclusively with some success. The largest acreage of belladonna in any one region was in California. In 1918, almost 100 acres were reported, which was more than twice the acreage reported from any other state. These growers reported a total harvest of 83 tons of herb, somewhat less than half of which was separated into leaves and stems at harvest time. Eleven tons of roots were also harvested.

Occasionally attempts were made in the past 20 years to grow Levant wormseed as a source of santonin in various sections of the country. The company operating in Virginia near Washington, D. C., already mentioned, got the plant started well on rather poor soil after growing the seedlings in the greenhouse. However, the summer rains caused the plants to die from crown rot. The unripe tops contained a high percentage of santonin. An eastern manufacturer of pharmaceuticals had considerable success with a small-scale planting in the San Joaquin Valley in California, but the limited market for santonin discouraged any commercial planting. The Bureau of Plant Industry tried the plant in a number of localities and found it best adapted to irrigated regions in the West with little rain and high temperatures in summer. As a result of these trials a company undertook production of santonin in 1927 in northeastern Oregon, and this has been continued without interruption. Many difficulties were encountered in processing the crop, but a satisfactory extraction plant was finally developed.

Although the amount of castor oil used for various technical purposes is far greater than the quantity used medicinally, the castor-bean plant, source of castor oil, which is used for both medicinal and technical purposes, was a cultivated crop of some importance in the middle West during the period following the Civil War until about 20 years ago. Kansas and Oklahoma were the principal producing States and during the early period the beans were crushed in mills located in the Mississippi Valley. There is at present no domestic commercial production of castor beans.

Two other crops should be mentioned briefly although here again the medicinal use of their products is altogether secondary. Mustard seed is produced in California and Montana in greatly varying amounts. In 1938 the production in these States was 2,600,000 and 15,000,000 pounds, respectively. The other crop is the pungent red pepper of which several varieties are grown in the South and Southwest.

There has recently been published ("Journal of the American Pharmaceutical Association," XXVIII, 4, 197) the findings in experiments carried out to ascertain whether Ephedra sinica was a suitable object of commercial cultivation in the United States. The introduction of Ephedra sinica in South Dakota was made a few years ago in view of the likelihood of a world shortage taking place, and a preliminary report was issued in 1936. Seeds were collected during the years of 1933-37 and tests were made to determine the germination percentage. The average germination for the years 1933-36 is recorded as being 80.64, and the conclusion is reached that the plant, when grown in South Dakota, produces viable seeds from which it can be successfully propagated.

The conclusions reached as to the cultivation of ephedra in South Dakota were that the plant is climatically adapted and thrives in dry soils, mulching of the plant being unnecessary. The plants are resistant to disease and to insects, and if kept in rows can be

EXPOSING MEXICAN VANILLA BEANS TO THE SUN FOR AIRING

cultivated until they form a sod, rendering further cultivation unnecessary.

It was noticed that, with annual harvests, each successive year showed an increase in yield over the four-year period. Yields from two-year plants were greater than those of any one annual harvest, and approximately equal to the yield of the combined harvest of the first two years. Yields of three-year and four-year plants continued to increase, but the increase in weight was irregular. The following table gives data as to weights harvested, alkaloid content and yield:

Year	*Stem Age*	*Per Acre Yield*	*Assay Per Cent.*	*Total Alkaloids*
1933	One year	3,845 lbs.	0.125	4.84 lbs.
1934	One year	3,845 lbs.	0.150	5.22 lbs.
1935	One year	3,502 lbs.	0.153	5.35 lbs.
1936	One year	3,890 lbs.	0.167	6.49 lbs.
1937	One year	4,000 lbs.	2.214	8.56 lbs.
1935	Two year	6,921 lbs.	0.366	25.33 lbs.
1936	Three year	8,421 lbs.	0.421	34.45 lbs.
1937	Four year	10,101 lbs.	0.818	82.82 lbs.

The conclusion is reached that the four year old stems represent the best prospect for cultivation, as not only is the yield of active principle superior, but less expense is involved in handling one cutting than in handling four annual cuttings. It is claimed that the plants on which the experiments were carried out had not reached full production capacity owing to their having been continually disturbed for propagation purposes.

Upsher Smith Co., Minneapolis, and Parke, Davis & Co., Detroit, have been growing digitalis in the United States for some time. These firms do not, however, offer it in the market, their entire production being consumed in their own manufacturing processes.

Upsher Smith Co. writes us regarding their experiences with digitalis as follows: "The war of 1914-1918 created the same situation regarding digitalis as exists today. The war Department at that time called on the universities in various sections of the country to grow digitalis and it was then found that the leaf supplied from Minnesota was the most potent supplied by any university in the country, proving that the climate and soil in Minnesota are peculiarly suitable to the growth of digitalis.

"We started in 1919, first in St. Paul and later in other locations until we acquired Foxglove Farm near Wayzata, Minnesota, near famous Lake Minnetonka. Here we grow digitalis for our own requirements. The winters are very severe here and we do not attempt to cover up the first year plants, so that each February we start from seeds in the greenhouse, transplanting many times until the frost is out of the ground and the young plants may be set out. We have our own overhead sprinkling system, overcoming drought and to protect the plants in case of an early frost in the fall.

"The plants are given proper fertilizer and cultivation and when reach maximum growth, the leaves are cut by hand, carried immediately to a special building at the farm where the leaves are dried and cleaned within twenty-four hours after cutting. The drying is done by forced hot air and the cleaning is done on a gyrator sifter.

"The leaves can then be stored indefinitely in air-tight cans without decomposition until ready for grinding into powder for tincture or capsules or tablets, and assayed.

"The American grower will find his production costs much higher than he could, before the war, purchase digitalis leaves imported and laid down in New York. This is because of the cheap foreign labor and the greater care which growers like ourselves give the leaf."

At the present time the Medicinal Plant Garden of the School of Pharmacy at the University of Florida is experimenting with various plants which might be of commercial value in the state. In addition, private concerns and individuals are trying out drug plants at various points, especially in the southern part of the state with its distinctly subtropical climate.

The plant receiving the most attention at the present time is aloe, which grows quite readily in south Florida where several individuals are raising the plant commercially. Here aloe is grown for its leaves, which are marketed as such at present, but if a practical and cheap method of extracting aloin from the plants could be developed the present small acreage could be expanded to eventually take care of all our domestic requirements.

Another plant receiving attention at the present time is lemongrass, which is grown for its oil of which comparatively large quantities are being used in the cosmetic industry. This plant will grow easily throughout most of the state. Small lots are being produced commercially at the present time by at least one concern. The chief hindrance to the development of this industry is the lack of capital required to start; obviously with an oil-bearing grass a comparatively large acreage is needed to make economical use of the distillation equipment.

Experimental work is being done with a plant known as mountain mint which yields a volatile oil containing a large proportion of pulegone, which is of value in the manufacture of synthetic menthol. Another plant showing promise is ginger. It grows very easily in north and central Florida under varying conditions.

Camphor has been produced in Florida in the past but it was not a commercial success. Since this drug can be synthesized, there is little probability of a shortage of this material. An unsuccessful attempt was made several years ago to grow pyrethrum flowers in this state also. At present others are making another trial with this plant.

Other plants that will grow in some parts of Florida are capsicum, cardamom, squill and cajeput although little attention has been paid to these as yet.

Certain species of pyrethrum, chiefly those from Persia and the near East, have been employed for insecticidal purposes for considerably more than a century. Demand for the product, and the high prices that it commanded, led to attempts at the cultivation of pyrethrum in almost all parts of the world. It is now

At the left is shown the drying of cloves in the sun in Zanzibar, and below at the left is shown a native of Zanzibar picking cloves. Directly below is shown the harvesting of pyrethrum in Japan, and at the bottom of the page is shown the recovery of cod livers in Norway prior to the extraction of cod liver oil.

widely grown in Japan, France, and Switzerland, in addition to Persia and Dalmatia, its native habitat.

Attempts at the cultivation of pyrethrum in America have generally met with indifferent success. This plant has been grown successfully in a number of instances in this country, but usually as an ornamental garden plant. In 1881, seeds of pyrethrum were widely distributed by the Department of Agriculture in an effort to bring about general production of the plant, but success was not achieved. It appears that unfavorable climatic conditions were largely responsible for failures, but lack of adaptation of the plant to our environment may have been an even stronger factor.

The most recent experimental work with pyrethrum production in the United States is being done in Illinois. The fact must be stressed that the culture of pyrethrum in the Middle West is purely in the experimental stage. It is not fully known to what extent the plant will prove adaptable to our soil and climatic conditions. Before definite information can be given, and recommendations made, it is necessary to carry out further yield tests and to conduct intensive experiments to determine the relative toxicity of the flowers produced in this region in order that a valuation may be placed upon them.

A report received from West Palm Beach, Florida, would indicate that some success is being obtained in the production of black psyllium seed there. In the past this type of psyllium came entirely from France, now cut off from trade with the world. The factors interested in the Florida psyllium project write us:

"It is presumed that with the breaking off of relations with France by Britain, that the export of this year's crop of black psyllium will be cut off. If this turns out to be the case then the results we have obtained may be of importance. We have been conducting experiments in the growing of black psyllium for the past twelve months with success, so that we know when, where, how and under what conditions to grow black psyllium successfully. We enclose a small sprig of black psyllium, freshly plucked, for your inspection.

"However, as it is possible that the black psyllium situation may become acute some large dealer might be sufficiently interested to look us up through the medium of your office. If the price of black psyllium becomes attractive we may grow some twenty or thirty acres which would only be a drop in the bucket in the case of an acute shortage. Naturally the blonde psyllium imports would take up most of the slack. Nevertheless a certain portion of the market perhaps would insist upon its usual black psyllium supplies. We had intended growing black psyllium anyhow, but it looks like the war may make us step up our plans."

Probably one of the most successful efforts to grow crude drugs in this country is the Skagit Valley Golden Seal farm in Washington. Golden seal particularly lends itself to cultivation as the supplies of wild growth are now very limited and it is not indigenous to any other country.

The Skagit Valley farm accounts for 60 per cent. of the total cultivated production of golden seal root in this country. There are three other farms under cultivation having a production of 500 pounds per year each and a number of smaller establishments producing about 50 pounds each, per year. These smaller farms average 30 per cent. of the production which indicates that only 10 per cent. is being produced from wild growth to meet the total annual consumption of about 100 tons.

The cultivation of golden seal, however, is an expensive proposition. Natively the golden seal plants grow under forest trees. To provide the needed shade a system of wooden slats must be provided. Control of moisture is highly important. Irrigation ditches run through the whole plantings. It also takes from four to five years for the plants to mature during which time they must be carefully tended.

Sage is produced to some extent in Massachusetts, New Hampshire, and Vermont. Returns from experimental areas indicate that on good soil a yield of 2,000 pounds or more of dried tops per acre may be expected. In case the leaves only are harvested, the yield will be proportionately less. American leaf sage usually brings a considerably higher price than that imported from Europe.

Ergot is obtainable in the United States. This is a fungus growth on rye. Because it must be picked by hand the cost of production is so high here that it is never gathered so long as there are any available supplies abroad. Production is now centered mainly in Spain and Portugal.

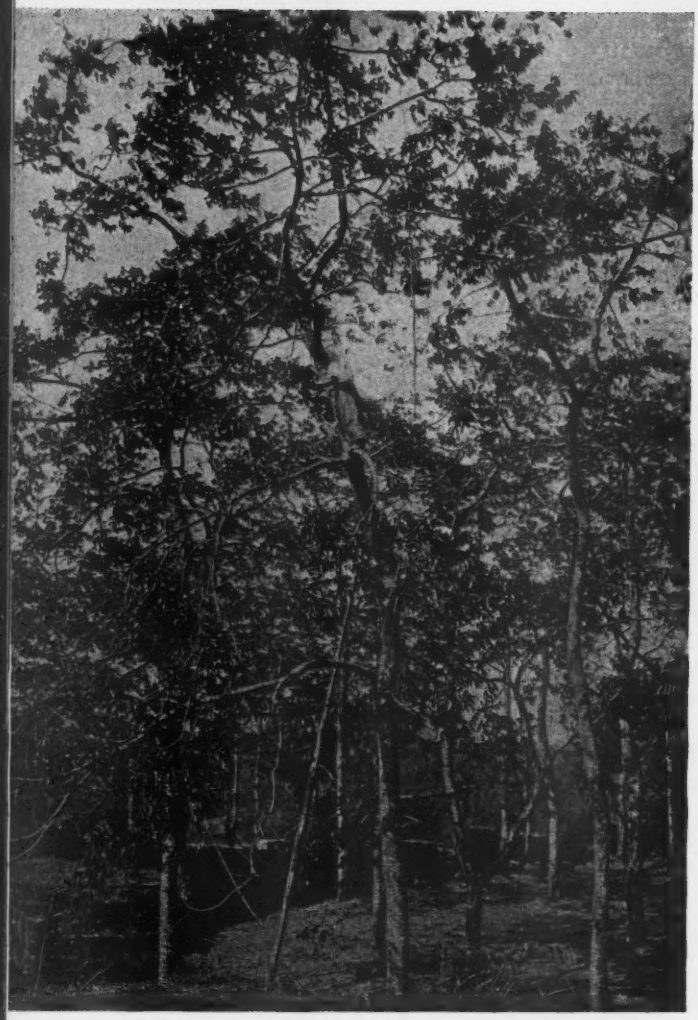
Senna grows very well in Texas, the quality being in every way comparable to the best grades received from Egypt. Here again the cost of production because of high priced labor and high land values makes it unlikely that cultivation will be undertaken unless supplies from abroad are cut off for a prolonged period.

Interest in the possibility of deriving profit from the growing of drug plants continues from year to year and now again is under the stimulating influence of the second great war. As a means of guaranteeing the future supply of crude drugs and of lessening the dependence on importations, the cultivation of drug plants should receive continued attention and encouragement whenever circumstances indicate that such an undertaking might be attended with success.

The problems presented by the cultivation of drug plants are not less difficult than those encountered in the production of many other crops. Drug plants are subject to the same diseases and risks as other crops and are similarly affected by variations in soil and climatic conditions. They require a considerable outlay of labor, the same as other crops, and likewise require intelligent care and handling. They are subject to the same laws of supply and demand, and, like other products, must conform to the consumer's fancy and to definite trade requirements.

Assuming that the soil and climate of the situation selected are suitable for the growing of drug plants, it

(*Continued on page 538*)



Gathering Ylang Ylang blossoms. Note woman in tree top.

Gatherer cutting Black Haw branches.

Drying sheds protect Witch Hazel leaves allowing the green color to be retained.

A collector of Star Grass.

Above is shown a pile of fibrous root material during Vetiver harvest in Reunion.

To the right is a family group splitting Black Cohosh roots to insure curing.

ESSENTIAL OILS

The data contained in this article was collected during many months of correspondence. The subject is of vital interest to many in the trade and to others associated with it. It is our intention to continue our interest in this subject and to publish, from time to time, more things of interest as we hear of them. We welcome correspondence from anyone having knowledge of developments along this line.

Of the large number of volatile oils consumed in the industries, only a few are produced commercially in the United States. Our imports of essential oils and their compounds for perfume, drug uses and flavoring materials, in addition to the dried plant materials, their seeds or roots, stalks, bark or compounds made from these materials, is annually in excess of $32,000,000.

For generations the growing of flowers and plants for perfume products has been an important and highly specialized industry in various parts of the world, but especially in certain sections of Europe. The products that come from those sections have long been established firmly on the market and have to some extent become associated in the public mind with quality and excellence which, though perhaps not always justified, is nevertheless an important commercial aid.

In Russia considerable development and expansion has taken place in the cultivation of plants yielding essential oils necessary for perfumery, drugs, flavoring, cosmetics, soaps, etc. Russia already has in excess of 22 plant varieties and over 312,000 acres devoted to this cultivation and for many years held second place in the world output of rose geranium oil. During the past year or two Russia has become an important exporter of peppermint oil.

Although wild plants and aromatic botanicals such as thyme, peppermint, roses, jasmine, origanum, and geranium have always flourished in Palestine, only in the last decade has any serious attempt been made to list and exploit these products.

The large influx of immigration from Europe since 1920 naturally resulted in the most far-reaching changes in the economic life of the country. Many of the new arrivals were Jews with progressive ideas, coming under the impetus of the Zionist movement and imbued with the desire to develop the resources of Palestine to the utmost. Under the auspices of the Jewish Agency there were, therefore, established certain agricultural organizations such as the Palestine Jewish Colonization Association, the Institute of Agriculture and Natural History and the Jewish Agricultural Experiment Station.

In cooperation, these bodies undertook a detailed study of the natural flowers and essential oils of Palestine and the best means for their development.

While the industry in Palestine is still small, marked improvement has been made and exports have increased, particularly to the United States.

The British Government in Central Africa is developing an undertaking for the growing of geranium, lavender, pyrethrum and many other plants. The processing is taking place on the spot.

Hungary developed its large acreage of essential oil, drug and flavoring plants after the last great war, for use and sale in the large consuming market of the United States.

Because of such successes abroad it is only natural that the growing of flowers or aromatic plants as raw material for the perfume industry appears to many persons to be a logical undertaking in this country, with its variety of soil and climatic conditions. At the present time interest in the subject is widespread, the trend toward the development of such a home industry being further encouraged by the same factors that resulted in considerable experimental work during the World War.

A brief summary of the essential oils produced in the United States, and the possibilities for the expansion of

A view of the fighting in the Spanish civil war shows what happens to Lavender and other crops.

Lavender harvest.

Gathering Roses in Bulgaria.

Collecting Cinnamon.

Above is shown a migratory essential oil still in Morocco. To the

the industry to include those products normally available only from foreign countries is of timely interest to all supplier's and consumers who may have misgivings as to their future supplies in event of a long conflict abroad.

For the purpose of discussing briefly the principal commercial oils produced in this country they may conveniently be placed in three groups: (1) Those obtained from wild plants; (2) those obtained from plants grown for that purpose; and (3) those obtained as by-products from wastes of other industries.

The oils obtained from wild plants include those which are produced from trees, shrubs, or herbs growing without cultivation over considerable areas and in sufficient abundance to make their collection, and the distillation of their odorous portions, economically possible. The majority of such oils are produced over scattered areas, the production centers being shifted frequently as the supply of material becomes exhausted and new fields are entered.

The largest production of any one volatile oil in this country is that of oil of turpentine, which is obtained by the distillation of oleoresin from several species of Pinus that grow over the southeastern coastal plain and in the Gulf Coast States.

Sassafras oil is obtained from Sassafras officinale, a tree widely distributed over the eastern United States from southern Ontario to Florida and Alabama, and westward to Kansas. The oil is found principally in the bark and wood of the roots. The distillation of sassafras oil began more than a century ago and until comparatively recent times was conducted in a very crude way. In more recent years the industry has been carried on in the South, particularly Tennessee, and has assumed a more modern aspect. Sassafras oil has well-recognized medicinal value, but its greatest use is in the manufacture of soft drinks.

The leaves of Gaultheria procumbens supply the natural wintergreen oil of commerce. The plant was formerly abundant, but its occurrence in quantity is now largely restricted to the wooded mountain regions of the Middle Atlantic States.

The wintergreen oil industry started in New England, but later it extended to the mountainous regions of New York, New Jersey, Pennsylvania, West Virginia, and Maryland. At the present time it is centered in Pennsylvania and Tennessee. Wintergreen oil has long been recognized as possessing valuable medicinal properties and finds extensive use in pharmaceutical preparations. It is also widely used to flavor candies and soft drinks.

Sweet birch (Betula lenta) is a tree which grows throughout the eastern United States from Canada south to Georgia and Alabama, and westward as far as Minnesota and Kansas. At present much of the oil is being produced in Connecticut and Tennessee. On an average the yield of oil is about 5 pounds from a ton of material. The proper season for distilling sweet birch is from May to the latter part of September.

The preparation of witch-hazel extract is a small but well-developed industry centered in southern Connecticut. Canada fleabane (Erigeron canadensis), is the source of erigeron oil, which is used to a limited extent in medicinal preparations. The plant grows freely as a weed in the Western and North Central States, where the oil is frequently distilled in a small way by those engaged in the distillation of peppermint oil. Oil of Pennyroyal is produced in limited quantities from the herb of Hedeoma pulegioides in North Carolina, Tennessee, and Ohio, where the plant occurs naturally in considerable abundance.

Excepting the turpentine industry, the production of volatile oils in this country from wild plants is of comparatively small magnitude as compared with the production from plants cultivated for that purpose, although the number of varieties of cultivated plants is small. At the present time only peppermint, spearmint, tansy, wormwood, and American wormseed are under cultivation on an established basis.

Second only to oil of turpentine, the production of peppermint oil constitutes the largest volatile-oil industry in the United States. The oil is produced entirely from cultivated plants of Mentha piperita. Acreage planted in the mint producing states for 1940 is as follows:

State	*Acreage*
Indiana	12,000
Michigan	15,600
Ohio	80
Oregon	2,250
Washington	1,000

Production in 1933 amounted to 503,000 pounds and reached a high in 1935 of 1,352,000 pounds. Through July 1, 1939, production amounted to 835,000 pounds.

It is in the mint industry that volatile oil production has perhaps reached its highest development in the United States. Cultural methods have been largely standardized, and among the large producers the highest type of distilling equipment is used. Peppermint oil is also produced in England, France, Italy and Russia, but the American production is the predominating influence in the world supply; consequently prices are directly influenced by the domestic crop.

Peppermint is one of the most useful and important of the commercial volatile oils. It possesses pronounced medicinal properties and is extensively used in pharmaceutical preparations. It finds its greatest use, however, as a flavoring agent for candies, chewing gum, and tooth pastes.

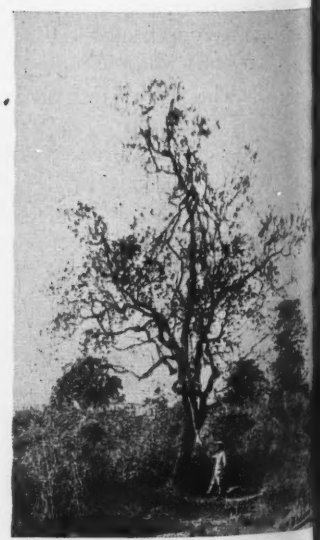
Spearmint is closely related to peppermint and has the same cultural requirements. The production of spearmint oil is restricted largely to southern Michigan, where about 40,000 pounds are produced annually. Spearmint oil is used mostly for flavoring chewing gum and tooth paste.

Perhaps the most interesting essential oil crop in the country is the American wormseed which has been cultivated for the production of chenopodium oil, a well known anthelmintic, for more than 100 years in a small

A Cedar Leaf still in New York State.

Crude Aloes are boiled in copper kettles.

Above is shown a native tapping a tree for Gum Arabic in Khartoum, Africa. Below are shown natives of Java felling Cinchona trees and stripping the bark from which Quinine is to be extracted.



Sandalwood tree in Mysore, India.

area in central Maryland. It is a curious fact that the crop never became established elsewhere but this may be due to the erroneous belief that once prevailed that oil produced in any other region is lacking in quality.

Another essential oil crop of interest is wormwood. Many years ago wormwood was cultivated in Wisconsin where the oil was distilled with crude equipment. Since then its culture has become more confined to the midwest where mint growers cultivate small acreages from year to year, in accordance with market conditions. The only important outlet for the oil is as a component of liniments.

Tansy (Tanacetum vulgaris) has been under cultivation in certain sections of Michigan and Indiana for many years. The production of oil of dill is still largely in the experimental stage, although small acreages have been grown from time to time in the Central West and in Maryland.

The development of the citrus oil industry in California is undoubtedly the greatest forward step taken in the production of domestic oils during the past decade. From a by-product industry some years ago, it has now grown to the point where the largest percentage of the domestic consuming requirements of both orange and lemon oil are supplied by the California producers. The most modern processes for handling the oil production has made this industry possible under domestic conditions.

The California Products Co., Fresno, California, are now making refined grape seed oil as a by-product from the manufacture of brandy. The oil from the seeds is used extensively in the manufacture of cosmetics and medicines and for coating commercial raisins. The plant manufactures about 25,000 gallons of grape seed oil annually.

Before 1900 thousands of tons of grape seeds from the packing plants were piled in huge stacks and burned each year. The discovery that an excellent bland vegetable oil could be pressed from the seeds led to the erection of an oil press. Originally, the oil produced was sold to paint manufacturers, but time and further experiments have shown it is better adapted to food, cosmetics, medicinal and specialized industrial uses.

The composition of grape seed oil is as follows:

Glycerides of:

Oleic acid	33.5
Linoleic acid	52.7
Linolenic acid	2.4
Palmitic acid	6.3
Stearic acid	2.9
Arachidonic acid	0.07

Examination of the oil indicates:

Refractive Index at 25° C	1.4735
Specific gravity at 20° C	.92283
Optical Rotation	0.0
Acid value	.397
Saponification value	193.1
Iodine value	118.0
Ester value	192.7
Acetyl value	18.0
Melting point	−10.0°C

Other oils obtained in the United States as by-products include apricot and bitter-almond oils, cedarwood oil and hop oil.

The possibilities of extending the production of botanical species yielding volatile oils has been given considerable attention in the United States in the past and, now again, a revival of interest in this subject is widespread. The following products have been suggested to us by one of the leading chemists in the industry as having possibilities for cultivation here: geranium, vetiver, valerian, calamus, coriander, parsley, celery and caraway.

A commercial vetiver farm is now in existence in Louisiana. The natural perfumed root is being sold throughout the country for sachet purposes only. This farm has been producing vetiver root since 1931, increasing plantings each year as the demand for the root expanded. Present acreage amounts to seven acres with approximately seventy thousand plants which is ample for the present system of marketing. Propagation is by division so that at any time it is possible for this farm to increase plantings four fold. The matter of distilling vetiver oil at this farm is being given considerable thought and plans are already being made to purchase the necessary distillation equipment. A more detailed article on vetiver will be found elsewhere in this issue.

Geranium oil, which is imported in an amount ranging from 100,000 to 200,000 pounds annually, is obtained by steam distillation from several fragrant species of geranium. The plant is not hardy and in this country cannot be grown as a perennial in regions where below freezing temperatures are likely to occur. Florida and southern California are best adapted to the plant. It makes good growth in southern Texas but is frequently damaged and even destroyed by cold in that section.

In Florida one or two crops may be cut during the growing season depending on weather conditions. In favorable seasons crops in June and in October are reasonably certain. In southern California when grown under irrigation three crops a year are possible, namely in May, August, and October, provided water and fertilizer are used as needed.

The yield of oil obtained from a given area of ground is likely to vary greatly according to the condition and quantity of the herb. In the many experimental plantings made in Florida and California calculated yields per acre have ranged from a few pounds to as high as 17 pounds per cutting. In central Florida from 10 to 15 pounds per acre may be expected in a year if two good crops are obtained. From three crops in California 15 to 25 pounds of oil should be obtained under the best conditions according to the results obtained in trial plantings in San Diego and Orange counties.

The National Farm Chemurgic Council has just issued a bulletin on the domestic production of essential oils from aromatic plants. In this valuable compilation of reasearch papers relating to problems in the agricultural production of essential oils from cultivation of

At the left is a field of Roman Chamomiles being harvested.

Above is shown the distillation of Lavender in France. At the

Native of Japan washing seaweed which will be refined into Agar Agar.

aromatic plants they particularly call attention to the commercial possibilities of producing coriander, caraway, anise, fennel, angelica and licorice in the United States.

Coriander originated in southern Europe and in the eastern part of Asia Minor. It grows wild or can be cultivated. Coriander is a rather easily cultivated plant. It can grow in almost any soil except ground with swampy drainage. The best growth sites are considered to be either a black or rich limy soil. It requires sunny locations, as in the shade excess of humidity may affect adversely the health of the plant.

Experimental cultivation of coriander seed was carried out in Jefferson County, Kentucky. The cultivation of coriander has also been done experimentally in Hancock County, Ohio. Oil of coriander seed is used for flavoring foods such as candies, condiment sauces in general, and mayonnaise. It is also used for pharmaceutical purposes, perfumes, and soaps and for flavoring tobacco products, gins, and cordials.

Caraway is cultivated mostly in Europe, the best quality coming from Holland. The method of cultivation is similar to that used for coriander, and quite frequently this botanical is planted with coriander. The coriander matures earlier as it is an annual plant, and it is harvested before the caraway produces a flowering stem. Caraway, like coriander, is harvested just before complete ripening, in the latter part of July and in some instances in August. It is cut before dawn. Crop yield is from 16 bu. to 20 bu. per acre.

Caraway is used in the food industry. In medicine the tincture of caraway oil is used as a stomachic and carminative. The perfume and soap trade also consume quantities of this oil.

The herb, fennel, was known to the ancient Chinese and Egyptians, and was used by them for culinary and medicinal purposes. The plant grows almost anywhere, particularly in Spain, southern France, Macedonia, Moravia, southern Russia, Rumania, Saxony, Galicia, south Africa, etc.

Fennel is usually cultivated during the colder seasons of the year. Only in periods of extreme coldness, the dormant seed must be protected from frost and other detrimental climatic conditions by means of a protective layer of fallen leaves or a remaining stem-cutting of the previous crop. The harvesting takes place when the seeds are sufficiently hard and acquire a greenish-grey color. The fruit contains an aromatic oil similar to anise oil and is used in the manufacture of culinary products, and in medicine.

Angelica was first used as a spice during the fifteenth century. It is now grown commercially in Germany, England, Poland, Russia, Belgium, Italy and France. It can be raised by seeding in the usual manner, but germination is apt to be slow and irregular. Harvesting seasons are the fall (September, October) and the spring (April). After one year of growth, the root is carefully harvested, washed, and dried by air. Essential oil is distributed throughout the whole plant, being found in the seeds, leaves, stems, and roots. Commercially, the important parts are the roots, then seeds and stems.

The roots, young stems, and leaves are steeped in syrups to make candied angelica. The seeds are used for the flavoring of beverages, cakes, and candies. It is used in medicine as a tonic for digestion. The essential oil is used in perfumes, for flavoring bitters, certain liqueurs such as Chartreuse, and for some varieties of Vermouth, and gin.

The essential oil of sweet basil (Ocimum basilicum L.) because of its pleasant spicy odor and taste, has been used as a perfume and flavoring agent in European countries for centuries. The oil is distilled principally in Southern France and Spain, and to a less extent in Germany from the fresh flowering herb of Ocimum basilicum and allied species. It has an estragon-like odor and is said to be composed principally of methyl chavicol and linalool. However, the composition of the commercial oils may vary greatly depending both upon the species or variety and the geographical source of the plants from which the oil was distilled.

The Division of Drug and Related Plants of the U. S. Department of Agriculture has for several years been experimenting with the growing of this plant along with other essential oil plants at the Arlington Experiment Farm in Virginia. According to small scale experiments over a number of years the growing of this crop should present no unusual difficulties. The harvesting and dis-

(*Continued on page 539*)

A leading chemist and authority in the aromatic industry suggests the following additional products for perfumery as particularly suitable for production in the United States:

Lavender—provided efficient harvesting machines can be constructed. Farmer can wait three to four years for crop and crop will last at least five to six years and possibly seven to eight years. Soil and climate at Puget Sound is satisfactory and small plantings have been made there.

Clary Sage—Experiments in Puget Sound indicate production there quite possible. Russia made large plantings a few years ago and flooded the market with the result that drastic price declines resulted. Possibilities are limited by market requirements.

Bitter Orange—can be grown in California, Florida and Texas. Takes several years for trees to mature. Labor required to pick flowers a limiting factor.

The National Farm Chemurgic Council is enthusiastic about the possibility of producing the following essential oils in the United States:

Coriander *Caraway* *Anis*
Fennel *Angelica*

Carting Limes on a plantation in Dominica, British West Indies.

Above is shown the cleaning of Orange Flowers near Grasse preparatory to sending them to the still. At the right is shown the picking of violets under glass.

Above is shown cleaning and trimming of Jasmin plants at Grasse. Below is showing the picking of Bergamots in Italy.

Above is a view of the picking of Lemons in California. Below is shown a California Orange grove.

MEDICINAL CHEMICALS

Quite a different picture is presented in supplies of medicinal chemicals than during the last war. Practically all items are produced in this country in sufficient volume to meet any demand.

THE chemical industry of this country is in a position to supply drug and cosmetic manufacturers with all the products which they need for an indefinite period with extremely few exceptions. And as regards the exceptions, the chemical industry now has in this country supplies of these commodities sufficient for several years requirements. And by and large, the prices have not and should not advance. Advances have been necessary in the cases of some products made from imported raw materials, but these are few. Never again, as during the prior war, will this country be dependent upon foreign nations for the great number of chemicals which are used in this industry. Never again will prices multiply and speculation become rampant.

As is generally known, before the European war started, the narcotic manufacturers brought into this country a three or four year supply of the necessary opium. This is in the hands of the Government to be supplied to the manufacturers as needed for the manufacture of morphine and codeine. Likewise the manufacturers of quinine brought into this country enormous supplies of cinchona bark and within a short time the Government alone will have more quinine in its hands than this entire country uses in well over a year. Trouble with Japan, therefore, would not interfere with our supply of quinine from Java for a long time. Mercurials are not a problem, since this country is now producing mercury at a rate greater than it was ever consumed here. The price of mercury has advanced sharply, but the Italian mercury is shut off, and the Spanish mercury is priced higher than the domestic and only partially obtainable.

Tartars, which came from the wine producing countries such as France, Italy, and Spain, are not obtainable in sufficient quantity to fill our former demand and are much higher in price. But we are getting some supplies from Spain, and quite some supplies from Argentina, which is also a wine producing country. There are small quantities available in this country. However, a great shift has taken place, citric acid now being used in the place of tartaric acid in a great many instances. And we can get all the citric acid we need since it is mainly produced by the fermentation of beet sugar molasses. No longer are we dependent upon Italy for citrate of lime to make our citric acid. The fermentation method of producing citric acid has not only solved the problem of citric acid under present conditions, but it has greatly aided in solving the problem of tartaric acid.

Potash salts, which presented a real problem in the last war due to the fact that practically all our supplies came from Germany, are now plentiful in this country. Camphor, which formerly came only from Japan and later from Germany in the form of a synthetic product, can never again present a problem since it is now made synthetically in this country from domestic turpentine. Capacity in this country can readily be increased to meet our present requirements of nine or ten million pounds. Consumption of camphor has doubled within recent years due to the great growth of the plastic industry; but the requirements of medicinal camphor are not much over a million pounds a year, and this can easily be obtained from the domestic manufacturer.

A shortage of caffeine, or rather a very tight situation has developed in this product, but this is not due to the inability of domestic manufacturers to supply our normal requirements and there should be no need to fear for supplies of sufficient caffeine for domestic medicinal needs. Caffeine is in a tight position for several reasons, one of which is the fact that one of the raw materials—pressed cocoa cake from Holland—is no longer available. But in addition to this curtailment of imported raw material, which formerly could be adequately replaced here, there is an increased demand for caffeine from the pharmaceutical manufacturers due to

At the left are shown natives of Ethiopia holding a Civet cat. Below is shown Civet being weighed in the horns in which it is shipped.

Above is a view of a Camphor distillery in Formosa showing the vats outside. At the right is a view of a California orange grove.

the fact that these manufacturers are exporting much larger quantities of tablets containing caffeine. This additional export demand for pharmaceuticals is the result of the curtailment of supplies of pharmaceuticals from beligerent nations. In addition to this increased demand, there is the sharp increase in demand from the manufacturers of the cola type of soft drinks, which business has experienced a tremendous increase generally. Manufacturers of caffeine are handling the situation in a proper manner—they are guaranteeing regular users that they will take care of their requirements, and that prices will not be advanced unless costs of raw materials and production advance.

Menthol is one item that could not be replaced without extreme difficulty if we had trouble with the Orient. Natural menthol comes from Japan and China, and the synthetic menthol of which much has been said within recent years, is produced from Java citronella oil. Therefore, trouble with Japan would mean the end of most of our supplies of both natural and synthetic menthol. Menthol can be made from American peppermint oil, but this oil contains only fifty per cent. menthol against a content of eighty per cent. in the Japanese peppermint oil. Production from American peppermint oil would step the cost up very sharply in the first place, and in the second place we would have to produce a far greater amount of peppermint oil to satisfy both the users of peppermint oil and the users of menthol.

With respect to antiseptics we are in excellent condition. Not only have we developed enormous resources of iodine in this country in addition to the supplies that were always available in Chile, but we have developed many mercurial and other types of antiseptics of which our supplies are unlimited. In addition, sulfanilamide is available in unlimited quantities and this is most effective as an antiseptic in the treatment of wounds to prevent gas gangrene.

The organic chemical industry which was developed in this country following the last war is able to supply our needs for the many analgesics and hypnotics such as aspirin, aminopyrin, barbituric acid derivatives, and others. Sulfanilamide, a recent discovery used only under the supervision of the medical profession, was produced in the amount of 700,000 pounds in 1939, giving an indication of the capacity of the chemical industry to supply needed drugs, and also giving an indication of the extent to which organic chemicals are now used in medicine. Sulfapyridine and similar products can also be produced in unlimited quantities.

Some of the raw materials from which our medicinal alkaloids are extracted come from foreign countries, such as is the case with quinine. Ma huang for the extraction of ephedrine comes from China. However, we are now producing synthetic ephedrine and a curtailment of shipments of ma huang would not present the problem which it did a few years ago. Nux vomica for the extraction of strychnine and brucine comes from India and there is no reason to believe that this will not be available.

The chemical industry has taken over the production of many of our important vitamins from synthetic sources rather than from natural sources. Thus we do not have to give a second thought to supplies of vitamin B_1, vitamin $B_2(G)$, nicotinic acid, vitamin B_6, or vitamin C, since the chemical manufacturers will always be ready to supply these in any quantities.

Bromides are now produced in this country in amounts that were undreamed of some ten years ago. Domestic bismuth is plentiful. Tin sufficient for our needs will shortly be available from smelters in this country using Bolivian ore. In fact, there will hardly be anything in the nature of chemicals for this industry that will not be freely available.

While chemical manufacturers are loath to advance prices, they have had to do so in some instances, and may have to do so again. But these advances will not be the result of increased demand so long as the manufacturers have the capacity to produce the increased amounts and so long as they have sufficient raw materials at the same prices. The necessity of building new units, advances in raw materials as these raw materials are needed in greater quantities or by other industries, advances in the wages paid to labor under rearmament conditions, and increases in taxes will be the things that might bring about some advances.

Domestic Resources

(*Continued from page 511*)

crops over the year to cover overhead. This method requires an ideal soil and climate for the crops, experienced, skilled workmen and scientific managers, trained in agriculture and in plant extraction and distillation. That this second method has successfully replaced the first in many countries and for many crops is true. It is also true that the application of this method is spreading. It seems logical to assume that it is the only successful measure that can be introduced into America.

We must, therefore, eliminate those crops which do not fit into this picture of mechanical planting and harvesting with a centralized still or extraction plant, because of the character of the plant and its life cycle or because the market return will not favor this capital investment.

One decisive factor remains which must determine how far this country can go in immediate investment in this field. How long will the war last? Obviously, those who are willing to invest on the basis of a three- or five-year war can safely ignore the economic factors of medicinal or aromatic products procured from blockaded countries. But that, in fact only postpones the reckoning which must some day come, i. e. can we in this country compete with other countries favorable to this crop where the labor standards are low. We believe that there are such crops but we do not believe that they will be found and successfully cultivated without investment in time, money, labor and careful research.

AMERICAN VETIVER

AND ITS PRODUCTION

By HAROLD A. LEVEY, New Orleans, La.

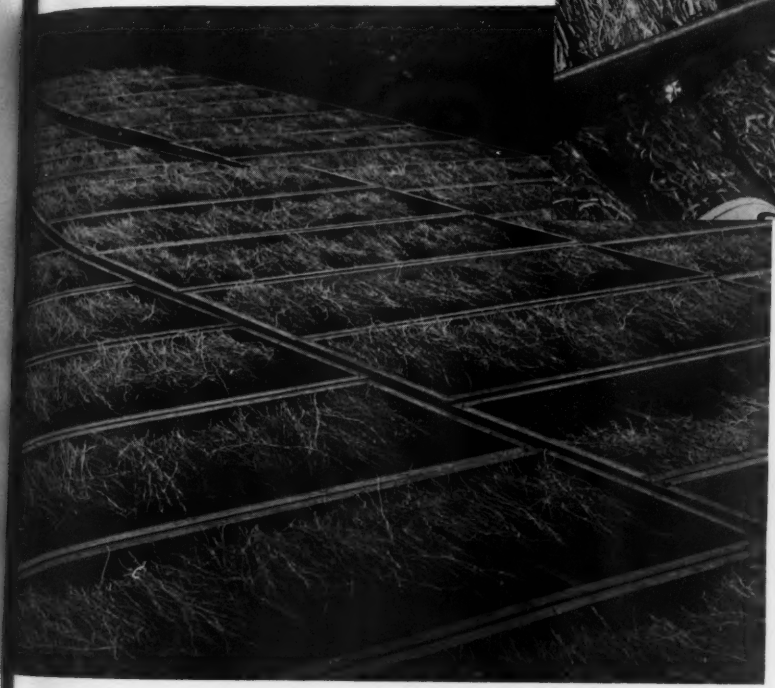
THE so called "New Order" of our international picture brings home to us ever more forcefully than ever before the desire of this country to become self-sufficient. Within the fields of our interest it may be achieved by synthetic means, or by natural production, conditions permitting, while substitution would be the last resort. In the case of vetiver we are fortunate indeed, in view of the fact that several areas of our great country contain the necessary combination of conditions required for the proper growth of this crop. It so happens that we have already taken several types of crops from the East Indies, and have successfully grown them in various sections of the United States. In this connection, it is interesting to note that among the earliest of these crops was Indigo which yielded one of our first natural dyestuffs, and was transplanted in this country from India. This was followed by sugar cane, and more recently by Vetiver. All of these crops have been successfully and profitably cultivated in the lower southern strip of the United States possessing soil and climatic conditions closely approximating that of India and the East Indian Islands.

For more than a decade Vetiver has been successfully grown in this zone. A number of varieties have been brought over; most of which have shown excellent hardiness, and ready adaptability to the petty changes of soil and climatic conditions. The extent of growth based upon the yield in "pounds of roots per acre" in this country is still substantially under that obtained in the East Indies. With scientific and intensive planting, together with the proper technical control our yield per acre may even exceed that now obtained in the Orient, based upon a single crop. However, like sugar cane and other grasses, we could obtain only one crop a year as compared with possibly some multiple of this in the Orient. This is due to the less marked seasonal conditions prevailing in that part of the Orient, due in some degree to their more tropical climate.

The areas in the United States which are now growing and successfully cultivating Vetiver are the Florida peninsula, the immediate Gulf Coastal area, and Southern California. These sections are in approximately the same latitude and experience approximately parallel climatic conditions. This is evidenced by the type of crops they now successfully grow, further indicating the closely related soil as well as climatic values. In addition to the necessary amount of sun-

On the opposite page is shown workers digging up vetiver root. In the lower left corner of this page is a worker washing the root. Directly below the root is drying in frames. And at the right the root is packaged for shipment.

PHOTOS COURTESY LOUISIANA VETIVER FARMS



found in the alluvial deposits at the deltas of rivers, and near the somewhat sandy loam approximating the coast line of the sea in the parts indicated.

In the United States in the areas described we already have plantations under cultivation. These vary in size from a few acres up to a dozen or more. A notable vetiver farm is under cultivation in the Mississippi delta near Hammon, La., having twelve acres under cultivation for several years. This farm varies from six to eight thousand plants to the acre, yielding from 500 to 750 lbs. of oil bearing roots per acre. This approximates about 75% of the yield of roots per acre in the Dutch East Indies, due in all probability to their more frequent cuttings per year, rather than the yield per crop per acre.

shine, rainfall and mildly acid soil conditions, there is required for Vetiver a loose sand and more or less porous soil structure for its optimum growth. At the same time this condition facilitates the ready removal of the roots from the soil, as well as the separation and cleansing of these roots. This soil structure is readily

The quality and the quantity of the yield of oil per pound of dry roots is largely dominated by the variety of vetiver cultivated. Both of these values can be substantially increased by the usual methods of biological selection. The present yields of oil of vetiver in this country varies from 1 to 1½ per cent., while the Java roots appear to yield 1½ to 2 per cent. In the removal of the plant approximately 100 lbs. of earth must be handled for every pound of root obtained. The removal of the roots from the ground involves the cutting off of the upper growth, leaving stems of 8 to 12 inches above the ground. The earth is loosened all around the plant to a depth of a foot to a foot and a half. The plant is then

carefully lifted out, and the roots cut and washed, and subsequently dried in the sun. These projecting stems are then removed, as they contain practically no oil. The upper growth referred to previously also has been shown to be completely free from the oil.

The drying operation, after the washing of the roots from earth, should reduce the moisture content of the roots from approximately 50% to 20% or less. Unless this drying is done under controlled conditions, an appreciable amount of the oil is lost at this stage. The roots are then shredded in standard types of cutting machines, reducing them to fibres of ⅛" to ½" in length, thus making available the cut faces of the roots which permit the ready extraction of the oil. Obviously, it is necessary to conduct the extraction process promptly after the cutting, otherwise, an appreciable amount of the oil will be lost through evaporation.

The steam distillation method of recovery accounts for the large bulk of oils now produced in the Far East. This process involves the passage of saturated steam over the roots which carry off the oil with the water vapor, the mixed vapors being condensed in the receiver. As the oils are almost insoluble in water, separation is readily effected by decantation. After drying, this becomes the oil of commerce. It is then subject to refining, and the separation of the vetiver alcohols and aldehydes from the oleoresins.

The solvent extraction process is in use on the continent and in the United States. It produces the highest quality of oil, and the maximum yield of both oil and resins. The process consists of washing the shredded roots with a low boiling highly volatile organic solvent from which the oil can be readily separated by fractional distillation, and the solvent recovered. The preferred solvents are clean petroleum fractions with a boiling range from 60° to 80° C., anhydrous methanol, and acetone. The methanol should be synthetic and not the wood distillation type which leaves undesirable residual odors contaminating the ultimate product. Due to the water solubility of the methanol and acetone, these solvents have to be dried by factional distillation or by chemical dehydration prior to reuse. There is a slight difference in the yields of both oil and resins with use of each of these solvents.

The extraction is effected by placing the shredded roots in a series of vessels properly connected with a piping system, whereby after continued operation the new solvent is placed in contact with the nearly completely extracted roots, and the nearly saturated solvent in contact with the fresh roots rich in oil. This arrangement quite closely parallels the system used in leaching or extracting the sugar content of sugar beets, and is known as the counterflow method. This method extracts from 8% to 15% more oil and from 20% to 30% more oleo-resins, leaving a root fibre which is practically free from even the minutest traces of vetiver.

The solvent carrying the oil is conducted to the distilling equipment which is heated by means of a steam jacket or a hot oil bath. The solvents come over first and are condensed and pumped back to the solvent tank for reuse in the extraction equipment. The oils and resins remaining are subjected to vacuum distillation, the oils coming over first, then the oleo-resins, while a resinoid-like residue remains in the retort. To secure a good quality of product, very high vacua must be maintained which permits the distillation operation to be conducted at the lowest possible temperature. The yield of oil is excellent and of good quality and pale in color.

Further purification and clarification of this product is effected by known chemical means. This includes such methods as differential solubilities of the several components for their separation, produced by suitable blends of mixed solvents, as well as by subsequent vacuum distillation. The ultimate refined product may then be treated with acetic anhydride resulting in vetiver acetate which finds preferential uses in certain perfume blends. Other derivatives such as the benzoate, the salicylate and phthalate are prepared in like manner.

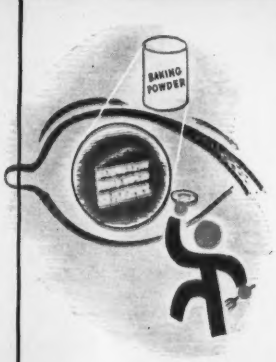
From the above presentation, it is obvious that the United States is in a most favorable situation to produce all and more than its present requirements of oil of vetiver. Notwithstanding the increased labor costs in the United States as compared with that of the oriental countries, we are in a position to avail ourselves of the use of automatic harvesting equipment which will very materially reduce the cost of collection. Making an enterprise of this type lucrative, would obviously necessitate the production of very large amounts of vetiver root from farms in close proximity in order to produce a satisfactory load factor on the mechanical handling equipment, which also involves apparatus for washing and subsequent shredding.

When it is considered that approximately 100 lbs. of earth must be handled to obtain a pound of roots which in turn yields at present less than a pound and a half of oil, some idea is formed of the manipulation required to produce relatively small amounts of finished material.

An interesting fact observed in connection with the growing of the vetiver plant in close proximity to the other crop which originally eminated from India, viz., sugar cane, is that the vetiver inhibited to a very substantial degree the attack upon the sugar cane of certain entomological organisms such as the cane borer. This procedure was used to a limited extent some years ago, but has not longer become necessary in view of the fact that the newer types of sugar canes originally cultivated in Java are now practically immune from such attacks by their very nature.

To further encourage the establishment and profitable maintenance of operation of the domestic cultivation of vetiver, it would in all probability be necessary to reclassify vetiver root as an imported product as well as the oil which now enters this country duty free. The primary function of the tariff would be more from the aspect of control and regulation, rather than to boost recent prices as delivered in New York, which have varied from 7c to 11c per pound depending upon quality and changes in market price. Even this seemingly

(*Continued on page 538*)



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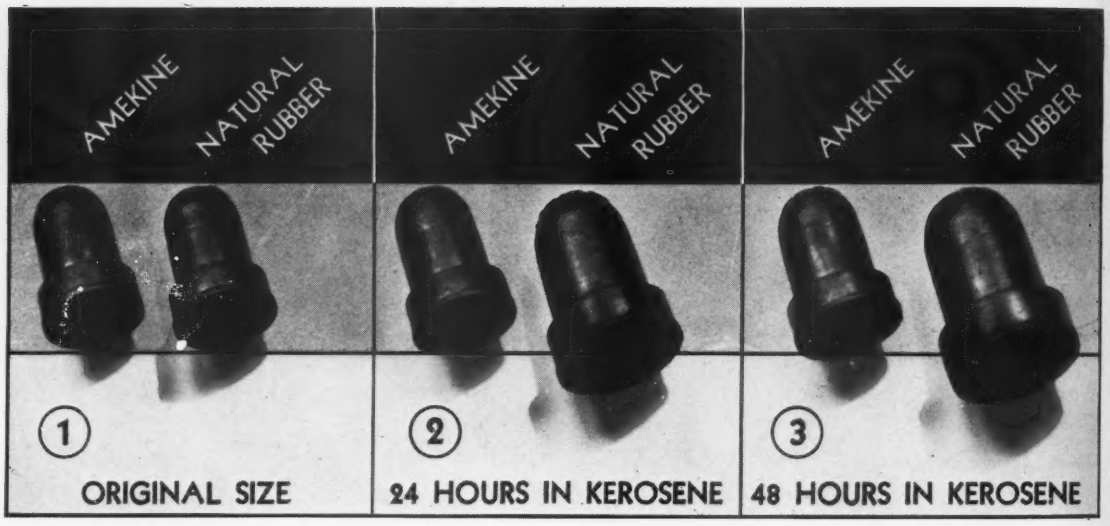

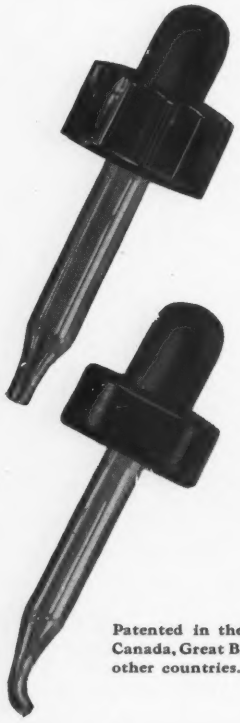

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New Perfection

DROPPING PARTS AND OUTFITS

SHARK LIVERS GIVE VITAMIN A

With cod liver oil supplies mainly shut off, other sources of vitamin A must be found since this has not as yet been produced synthetically. The shark offers a real source of this important vitamin and supplies are being increased.

Since not more than 5 per cent. of domestic consumption of cod liver oil is produced in the United States, the development of new sources of vitamins A and D becomes more imperative the longer the wars abroad continue and expand both in area and intensity.

Probably the greatest future source of vitamin oils is from fish other than cod. Domestic waters yield halibut, sole, tuna, California bonito, California mackerel, swordfish, sea-bass, cabrilla, totuava, sablefish, bocaccio, chili-pepper, wolffish, dogfish, pollack, hake, sardine and shark. All these fish contain vitamins A and D in quantities sufficient to make them commercially important as sources of oil.

The shark fishery in waters adjacent to the United States offers probably the greatest possibilities as a source of vitamin A. Shark liver oil is rather low in vitamin D, the ratio being 300 units of A to each unit of vitamin D. This shark oil, however, can be fortified from oils of the above mentioned fish, particularly sardine, which yields a good percentage of vitamin D.

The principal point of interest, however, in connection with shark liver oil is its relative abundance. A shark liver frequently weighs as much as one-fourth of the total weight of the fish and may contain as much as 50 per cent. of oil. In other words, where cod liver oil is obtained by the ounce, shark liver oil may be had by the gallon.

A shark fishing industry is already established in Florida and in California. There are about ten different varieties of shark caught off the coast of Florida, namely: leopard, tiger, sand, dusky, hammerhead, mackerel, lemon, nurse, black tip, and the great white shark. Reports from Florida indicate that the shark liver oil business in the southeastern part of the United States is still in its infancy and has not as yet attained a very large volume, although production has increased during the past two years.

In California, however, more rapid strides have been made. In one year the California shark fishery skyrocketed from a minor to a major position in the fisheries of the State. This leap to prominence is due entirely to the present demand for vitamins and the discovery that shark livers are rich in vitamin A.

As a result of the demand for liver oil, more pounds of sharks were landed in 1938 than either salmon, albacore or rockfish. This rapid rise in demand for shark liver oil has focused the attention of the fishing industry, as well as the public, upon the maligned shark as a profitable field for exploitation.

The following figures well illustrate the growth of the shark fishing in California. In 1930 total landings of shark amounted to 647,297 pounds; 1931, 596,134 pounds; 1932, 850,888 pounds; 1933, 471,030 pounds; 1934, 526,280 pounds; 1935, 555,121 pounds; 1936, 471,-861 pounds; 1937, 914,205 pounds; 1938, 7,504,186 pounds and 1939, 9,156,572 pounds.

Prior to 1937, sharks were caught incidentally to other fishing. In central California they were considered almost worthless and few were brought ashore, although a small proportion was filleted, and the fins of the soupfin shark were dried and sold for a soup stock. The market for sharks was better in southern California and the fishermen could usually sell all they caught.

The shark, like the hog of packing house fame, may be almost entirely utilized. There is an excellent market for shark hides which make a very high grade leather. The fins are dried and sold at quite astonishing prices to Oriental markets for use as food. The flesh and bones are dried and ground for use as stock feed and fertilizer. Certain glandular products are of interest from a therapeutic standpoint. This is particularly favorable to the establishment of a shark liver oil industry as the lack of a sufficiently large market for fresh or dried fish has

always been a handicap in efforts to produce more fish oils in the United States.

Sharks destined for liver oil production were first delivered in January, 1937. Prior to that date, the soupfin sharks delivered incidentally to other fishing had their fins removed, along with some of the choicer cuts of steak that were later sold to the consumer as grayfish, fillet of sole or swordfish. The rest of the carcass was run through a reduction plant. Sharks other than soupfin were seldom brought ashore as there was little demand for them. Before 1937 some fish processing companies had experimented with shark liver oil but it was not until January of that year that the industry started on a commercial basis. Sharks valuable for their liver oil were sold to the California Packing Corporation at Monterey were special equipment for handling these livers and carcasses was installed. The F. E. Booth Company entered the field about the same time in San Francisco.

In 1937 three market jig boats, fishing set lines and working out of Monterey, were the nucleus of the present shark-fleet that numbers about 600 boats scattered throughout the State; although this number is never fishing sharks all at one time.

The fishing grounds have not been standardized as yet, although most Monterey boats limit their activities to that section of the coast bewteen Port San Luis and Half Moon Bay. In Santa Barbara the fishery centers around the Channel Islands. San Pedro and San Diego have not expanded greatly since the shark fishery went on a liver oil basis. Fishermen there have always caught sharks for a well-developed food market. Now the livers are shipped to processors but the fishery is still on a food basis.

Methods used for the extraction of liver oil vary from heating the minced livers in open tubs and skimming the oil off the surface, to highly refined technique where each step of the process is under laboratory control.

The number of units of vitamin A per gram for the different species fluctuates considerably and the potency of one oil may be entirely different from the potency of the same liver oil in a different region. Seasonal and individual variations also influence these results; therefore, the great range in the following species, given in U. S. P. vitamin A units per gram: soupfin, 40,000-150,000; dogfish, 200-20,000; blue shark, 2,000-10,000. The ratio of liver to body weight also varies greatly, and while 8 to 12 per cent. is considered a rough average, individuals have been reported with the livers weighing as high as 30 per cent. of the body weight. The oil content of the livers is between 30 and 70 per cent. Vitamin D is negligible in shark livers, and as sardines provide a good source of this vitamin, no attempt is made to extract it from the shark livers.

The soupfin is by far the most valuable from any standpoint. The species listed in the order of value are as follows: soupfin (Galeorhinus zyopterus), grayfish (Squalus suckleyi), seven-gill shark (Notorynchus maculatus), leopard shark (Triakis semifasciata), and great blue shark (Prionace glauca).

Vitamin A oil is sold on a million-unit basis, regardless of what weight or volume it is. Oils yielding 100,000 or more U. S. P. vitamin A units per gram, sell between 4 and 8 cents per million U. S. P. units, and are known as high potency oils. Oils yield 20,000 or less, U. S. P. vitamin A units per gram sell for less than 4 cents per million U. S. P. units, and are low potency oils.

Although production of shark liver oil has expanded on both the East and West coasts of the United States during the past few years, greatly increased activity is necessary if production is to take care of a really important part of domestic requirements. What the future holds for the industry is unpredictable. In the past shark fisheries have been distinguished for a meteor-like rise followed by an equally sudden eclipse, as the sharks seem not abundant enough to maintain a large annual catch. However, the industry, particularly on the Pacific Coast, has a financial investment sufficiently large, and an interest sufficiently keen to investigate the possibilities of shark liver oil as a permanent and important source of vitamins.

American Vetiver

(*Continued from page 536*)

low price for such voluminous material would still give the cultivator a rather substantial monetary return per acre so cultivated. In view of the extremely bulky nature of the vetiver roots, and the undesirability of low storage after removal from the ground, it would obviously be desirable to remove the oil at a location quite close to the farms, thus eliminating the packing and transportation costs. The desirability of this procedure is evidenced by the fact that the occidental countries import a very much greater amount of oil as oil than they do roots from which they obtain the oil. As the roots have value as a commodity for use as such, acting as a natural vehicle of vetiver perfume, there will in all probability be a demand for a long time to come for the roots as such.

Vetiver has found a permanent place in the make-up of a very large number of perfumes of a wide variety of types produced in this country and abroad. There is little question but that the domestic production of vetiver will become a permanent component in American agricultural economy.

Botanicals

(*Continued from page 521*)

does not necessarily follow that they can be produced at a profit. The cost of production and marketing may be greater than the amount received for the crop when it is sold. Some drug plants not well suited for cultivation on a large scale may be found profitable when grown on small areas as a side line. On the other hand, some may be produced more cheaply when cultivated on a scale large enough to warrant the use of labor saving devices

than when grown on small areas with the aid of hand labor alone.

The value of land, the cost and availability of labor, and the possible returns from other crops are all factors to be considered carefully. On account of the variation in these factors according to locality, the same crop might prove to be profitable in one location and unprofitable in another. It is for these reasons that unqualified statements concerning the ease and profitableness of drug plant growing should not be taken too seriously.

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Essential Oils

(*Continued from page 529*)

tilling operations are the same as for peppermint. The plant, however, is an annual, which will permit seasonal adjustments in acreage according to the fluctuation in demand for the oil.

Extensive experiments conducted by the C. E. Ising Corporation, Flushing, New York, some years ago indicate that a very fine grade of rose oil can be produced in California. Sage oil, orange blossom and orange flower oils, geranium, and petitgrain are among the many oils which have been extensively experimented with in California. Distillation equipment from these early experiments is available and it is said that production could be started there at short notice.

One may wonder why in connection with the East Texas commercial rose plant industry there has not been established a factory for extracting oil of roses or other essences as a by-product of the hundreds of millions of rose blooms which bloom on the nearly 20,000,-

(*Continued on page 543*)

(*Continued from page 513*)

Pine Needles, Siberian
Sandalwood
Sassafras
Savin
Snakeroot
Spearmint
Spruce
Styrax
Tansy
Tonka
Vetivert, Java
Wintergreen
Wormseed
Ylang Ylang, Manila

CHEMICALS

Safe from Economic Blockade (From White Areas on Map)

Bismuth Metal
Caffeine
Camphor
Chalk, Precip.
Citric Acid
Cod Liver Oil, Domestic Limited
Iodine
Menthol
Mercury Metal
Mineral Oil
Quinine
Talc
Tartrates

OILS

Subject to Economic Blockade (From Black Areas on Map)

Cod Liver Oil, European
Olive Oil

BOTANICALS

Subject to Economic Blockade (From Black Areas on Map)

Aconite
Adonis Vernalis
Althea
Alkanet Root
Ambrette Seed
Arnica Flowers
Barberry Bark
Belladonna
Benzoin Gum, Siam
Bitter Sweet Twigs
Borage
Buckthorn
Buckthorn Bark
Burgundy Pitch, Imported
Calendula Flowers
Caraway Seed
Celery Seed, French
Chamomile
Clover Tops, Imported
Colchicum
Colocynth Pulp
Coltsfoot Leaves
Comfrey Root
Coriander Seed, Morocco
Cumin Seed
Dandelion Root
Doggrass Root, Cut
Henbane Leaves
Elder Flowers, Imported
Fennel, European
Hellebore
Henbane Leaves
Henna
Hyssop
Iceland Moss
Juniper Berries
Laurel
Lemon Peel
Lily of Valley Root
Linden Flowers
Lovage
Lycopodium
Mallow Herb
Malva Flowers
Mandarin
Manna
Mastic Gum
Mullein Flowers
Myrtle
Opium
Pimpinella Root
Pomegranate Bark
Red Saunders
Rose Buds
Sandarac Gum

Scopola Root
Senna, Alexandria
Sloe Berries
Squill Root
Staveacre Seed
Stramonium
Sundew Herb
Talc, French-Italian
Turpeth
Valerian Root
Vetiver

BOTANICALS

Future Supplies in Doubt (From Gray Areas on Map)

Arabic Gum
Ephedra Vulgaris
Foenugreek
Gentian Root
Horehound Herb
Licorice Root
Paprika
Quince Seed
Saffron, Spanish
Uva Ursi

BOTANICALS

Safe from Economic Blockade (From White Areas on Map)

Agar
Alder Bark
Aletris Root
Allspice
Aloes
Ammoniac Gum
Angostura Bark
Anise
Annatto Seed
Arbor Vitae
Areca Nuts
Arrow Root
Asafoetida
Balm of Gilead Buds
Balmony Herb
Bayberry Bark
Bayberry Wax
Beeswax, Crude
Benzoin Gum, Sumatra
Beth Root
Birch Bark
Blackberries
Blackberry, Bark of Root
Black Cohosh Root
Black Indian Hemp Root
Black Oak Bark
Black Willow Bark
Blood Root
Blue Cohosh Root
Blue Flag Root
Boldo Leaves
Boneset Herb
Buchu Leaves
Burgundy Pitch, Domestic Limited
Butternut, Bark of Root
Button Snake Root
Calabar Beans
Canada Balsam
Canella Bark
Cantharides
Capsicum
Cardamom Seed
Cascara Amarga
Cascara Sagrada Bark
Cassia Buds
Cassia Fistula
Catechu Gum
Celery Seed, Indian
Ceresin Wax
Chestnut Leaves
Chicle Gum
Chicory Root
Chiretta
Cinchona Bark
Clover Tops, Domestic Limited
Cocculus Indicus
Cochineal
Colombo Root
Condurango Bark
Copaiba Balsam
Coriander Seed, Russian Limited
Cotton Root Bark
Cramp Bark
Cranesbill Root
Cubeb Berries
Cudbear
Culvers Root
Damiana
Deer Tongue Leaves
Derris Root
Digitalis
Dill Seed
Doggrass Root, Whole
Dogwood Bark
Dragons' Blood
Echinacea Root
Elder Flowers, Domestic Limited
Elemi Gum
Elm Bark
Ergot
Euphorbia Pilulifera
Fennel, Indian
Figwort Herb
Flax Seed
Fringe Tree Bark
Fuller's Earth
Galangal
Gambir Gum
Gamboge Gum
Gelsemium Root
Ginger
Ginseng Root
Golden Seal Root
Grains of Paradise
Grindella Robusta Herb
Ground Ivy Herb
Guaiac Gum
Guarana
Guaiac Wood
Helonias Root
Hemlock Bark
Hemp Seed
Horseradish Root
Hydrangea Root
Ipecac Root
Jalap Root
Jambul
Japan Wax
Jaborandi Leaves
Kamala
Kava Kava Root
Kola Nuts
Lady Slipper Root
Lobelia Herb
Lupulin
Mace
Manaca Root
Matico Leaves
Motherwort Herb
Mullein Leaves
Muria-Puama
Myrrh
Nutmegs
Nux Vomica
Papain
Paprika
Paraguay Tea
Pariera Brava Root
Passion Flower Herb
Pichi Leaves
Pimento
Pink Root
Pipsissewa Leaves
Pleurisy Root
Podophyllum
Poke Root
Poplar Bark
Prickly Ash Bark
Psyllium Seed, Blonde
Pyrethrum Flowers
Quassia Chips
Red Gum
Rhatany Root
Rhubarb Root
Sabadilla Seed
Saffron, Domestic
Sarsaparilla Root
Sassafras Bark
Saw Palmetto Berries
Senna, Tenevill
Serpentaria Root
Simaruba Bark
Snake Root
Soap Bark
Spearmint Leaves
Spikenard Root
Scammony Resin
Scammony Root
Scouring Rush Herb
Scullcap
Senega Root
Spruce Gum
Stillingia Root
Stone Root
Strophanthus Seed
Sumach Berries
Sunflower Seed
Tamarack Bark
Tamarinds
Tansy Herb
Tolu Balsam
Tragacanth Gum
Turmeric
Vanilla Beans, Mexican, Tahiti, South American
Wahoo, Bark of Root
White Ash Root
White Oak Bark
White Pine Bark
Wild Cherry Bark
Wild Indigo Root
Wild Yam Root
Willow Bark
Wintergreen Leaves
Yellow Dock Root
Yellow Parilla Root
Yellow Root
Yerba Santa

AROMATIC CHEMICALS

With the curtailment of supplies of many essential oils, the aromatic chemical industry becomes of still greater importance. Not only can this industry continue to produce the very large majority of aromatic chemicals formerly produced, but it can and will produce many aromatic chemicals formerly imported.

With the shortage of many essential oils, this country is extremely fortunate to have the aromatic chemical industry which evolved as part of the development of the organic chemical industry which followed the last war. Not only have manufacturers in this industry been producing practically all of the aromatic chemicals that are needed, but they can now increase their capacity to make up in part for some of the oils that are not now coming forward, and they can and will for the most part, produce those necessary aromatic chemicals that were formerly not made in this country.

While aromatic chemicals as generally spoken of include both those which are natural derivatives and those which are produced from the ordinary available crudes of the organic chemical industry, we now must distinguish between the two to some extent. For if we are unable to get geranium oil then we lose our main source of rhodinol; if we are unable to get bois de rose, then we lose our main source of linalool and linalyl acetate. However, there are other oils which can be used to obtain varying grades of these materials although most of these other oils are also imported. But many of the aromatic chemicals are made from ordinary crudes in the manner in which vanillin is made from guaiacol which in turn comes from coal tar. Of course vanillin is also extracted from wood, and is further made from eugenol extracted from cloves or cinnamon leaves.

The very large majority of aromatic chemicals are based on ordinary chemical crudes which will always be available in this country. And many of the aromatics which are based on oils from foreign countries will also be available. However, there are some very important natural derivatives that probably will not be available. Bois de Rose will continue to be available for use in its original state or for the production of linalool, linalyl acetate, artificial bergamot oil, and artificial lavender This is for the reason that it comes from Brazil. But because of the stoppage of bergamot supplies and because of the use bois de rose to replace other items that cannot now be imported, the supply of bois de rose might be sufficient to meet the demand. This is an example of how the market will be affected even in those things which will always be available.

Rhodinol is an extremely important product to the perfumer. But this is made from geranium oil, and now French and African geranium oils ceased to come forward and Bourbon geranium oil from the Reunion islands seems to be unobtainable for import for the present at least. A poorer type of rhodinol is obtained in the fraction distilled from Java citronella oil between geraniol and citronellol.

Other derivatives such as safrol, iso-safrol, and heliotropin are made from Japanese sassafrassy camphor oil, and this oil is not coming forward freely although there is no blockade. This is due to the fact that the Japanese are using their camphor oils as flotation agents in mining operations in their own country.

Indol is an important aromatic that was formerly imported because it was used in very small volume. However the demand for it is increasing and it is now being made in this country. Likewise, methyl heptine carbonate, methyl hexyl ketone, and scatol are, or will be shortly available from manufacturers in this country. The aliphatic alcohols and aldehydes are all being made here now with the exception of C_9 and C_{11}.

The synthetic musks have been available in this country for many years. Artificial civet and other fixatives have been made here for many years and will continue to be available to perfumers.

METHYL SALICYLATE MONSANTO

(METHYL SALICYLATE U. S. P.)

Methyl salicylate is used in candies, dentifrices, antiseptics and other products to impart either a wintergreen flavor or a wintergreen odor.

In Methyl Salicylate Monsanto will be found a uniform, high grade product capable of fulfilling strictest requirements. One of the reasons for this is the purity of the basic materials from which it is made. Here, Monsanto is in the unique position of being its own supplier, thus assuring a dependable source of high quality material at all times. Let us fill your next order.

MONSANTO CHEMICAL COMPANY, St. Louis, U.S.A.
District Offices: New York, Chicago, Boston, Detroit, Charlotte, Birmingham, Los Angeles, San Francisco, Montreal, London.

SPECIFICATIONS: METHYL SALICYLATE MONSANTO

Water-white liquid.
Odor: characteristic; pure, sweet.
Specific gravity at 25° C.: 1.180 - 1.185.
Solubility in alcohol: 1.7, complete.
Heavy metals: negative.

MONSANTO CHEMICALS
SERVING INDUSTRY...WHICH SERVES MANKIND

Essential Oils

(*Continued from page 539*)

000 rosebushes that are shipped to the North and East each season. The cape jasmine is an important flower of Southeast Texas and might easily be expanded into an industry producing jasmine oil used by makers of perfumes, soaps and detergents.

That the Texas horticulturist and farmer is not unaware of the possibilities of producing essential oils in their state is well evidenced by the fact that we recently received a letter from the Hon. W. L. O'Daniel, Governor of Texas, indicating a keen interest in this subject. Inquiries are being sent out by the Executive Department of the State Government to ascertain the requirements of industry in relation to essential oils and what preliminary steps are necessary for the establishment of such an industry in Texas.

There are many localities in the United States in which lavender can be grown with reasonable success, but it is not adapted to the extreme South and it would sustain winter damage in the Northern States. It has been grown without difficulty at Washington, D. C., but is not especially productive under conditions there. The excellent conditions of plants under cultivation in the Pacific Northwest led to experiments being undertaken in the Puget Sound region where information is now being obtained regarding the cultural methods required, the yield and quality of oil produced, the cost of production, and the possibilities of the crop.

Lavender may be propagated from seed or cuttings. Seed is sown in a seedbed in the fall or early in the spring, and the seedlings transplanted to the field when several inches in height, Root cuttings, if available at a reasonable cost, are more satisfactory and will provide productive plants in less time than seedlings. Both grow slowly and require careful cultivation to control weeds. Sufficient flowers to justify harvesting are not obtained until the plants are several years old.

There is a limited market for dried lavender flowers which are used for sachet bags. A more important commercial product is the lavender oil of which several hundred thousand pounds are imported annually. For the production of oil the flowers are cut and immediately distilled with steam without being separated from the stalk. The amount of oil obtained from a ton of flowers on the stalks varies from 10 to 20 pounds. No conclusive data have been obtained as yet to indicate the yield per acre, and the experiments under way are too incomplete to furnish information on production costs. Specialists on perfumery products have declared the oils produced to compare favorably with most of the lavender oils obtained in Europe.

While considerable preliminary work has been done in the United States toward establishing an essential oil industry, there are important factors to be reckoned with in considering the advisability of engaging in the cultivation of plants for such an industry. Due thought should be given to the cultural requirements of the plants, the most practical method of extracting the oil, and the marketing problem, with special reference to the trade requirements and the prices obtainable under normal conditions.

The cultivation of such plants is not unlike that of the more common crops, but frequently involves greater hazards, especially in connection with marketing the products obtained. Those oils which are extensively produced in foreign countries are especially subject to occasional overproduction, thus causing periods of market depression. On the other hand, political or economic disturbances frequently reduce foreign production to such an extent that a period of high prices results, with its attendant benefit to the domestic producer.

The several factors which determine the economic possibilities of a volatile oil crop are soil and climate, acre yields, cost of production, competition with other crops, and price and marketability of the oil. It would seem, for the time being at least, that those crops which are in sufficient demand to warrant the use of automatic cultivation equipment have the best chance of competing with foreign production as labor costs and land values play such a large part in total production costs in this country.

PHOTOS COURTESY C. E. ISING CORPORATION

ROSE HARVEST, HEMET, CALIF.

PETITGRAIN DISTILLATION

of the Women in one of Detroit's Largest Offices

USE LIPSTICKS OF SCOVILL CUSTOMERS

393 women working in a great automotive manufacturer's main office were asked, "What brand of lipstick do you use?" 221, or 56%, named firms that buy one or more of their containers from Scovill. 12 out of the 22 brands mentioned by the 393 women were those of Scovill customers.

WHAT IS SCOVILL'S ATTRACTION FOR COSMETIC LEADERS?

The choice of Scovill, as a supplier of containers and closures, is based on three reasons:

First is economy in production. Responsible for this are a staff of engineers, familiar with handling all types of metal and metal-plastic combinations, and a great variety of high production machines.

Second is the designing aid furnished by Scovill stylists, working from an idea, a drawing, or a model.

Finally, Scovill has available many sales-spurring developments. For example: multi-color reproduction on metal—beautiful "Indurite" finishes on aluminum.

Call in a representative from our nearest office to discuss your problems, or to show you recent examples of work for well-known firms. Scovill Manufacturing Company, Drug and Cosmetic Container Division, 69 Mill Street, Waterbury, Connecticut.

The Majority of Brands in Leading Stores Have Scovill-Made Containers

Boston, Providence, New York, Philadelphia, Syracuse, Pittsburgh, Chicago, Cincinnati, San Francisco, Los Angeles
IN CANADA: 334 King Street, East, Toronto, Ontario

ASSOCIATED DISTRIBUTORS

ASSOCIATED DISTRIBUTORS

Chen Yu, meaning precious lacquer, has been introduced by Associated Distributors. The Chen Yu color range includes fourteen shades, each with a descriptive Chinese name, and each shade comes in a small Chinese vase. Accompanying the regular half ounce size is a miniature of the same shade. This is for the purse, or for week-end use.

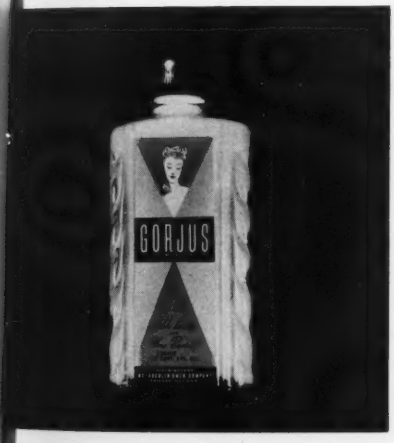
SATINOL CO.

Satinol beauty bath steps out in its new delicate petal-pink cylinder box trimmed in gold lettering. Its rich oil blend helps to impart softness and prevent dryness of the skin. Available in six fragrances—rose geranium, mimosa, lemon verbena, gardenia, northern pine and wood violet. Sold singly or in popular priced gift sets.

SATINOL CO.

McLAUGHLIN-OWEN

Following a successful record as a hair conditioner in the professional beauty shop field, "Gorjus" is now available to the consumer through regular retail drug and department store outlets. It is a creamy, non-greasy liquid a few drops of which are brushed into the hair after shampooing, or when combing and arranging the hair.



McLAUGHLIN-OWEN CO.

ANNETTE JENNINGS, INC.

"Minipoo," a quick dry shampoo is being introduced by Annette Jennings, Inc. It is designed to keep hair clean and well-groomed between regular shampoos. Minipoo is said to remove dirt and oil from hair just as cleansing cream removes it from the skin. It is simply rubbed through the hair and removed with the glove provided. Grooming is completed by thorough brushing. Used dry—no water required.

ANNETTE JENNINGS, INC.

TUVACHÉ

Tuvaché offers five interesting perfumes created from exotic tropical flowers found in the jungles of Algiers and Morocco which are compounded and packaged in the United States. The line also includes White Hyacinth cologne and two colognes for gentlemen—Cossack and Highlander. The perfumes for women come in grass cloth boxes tied with suede which give them a very personal hand-craft look. The labels on the bottles are also suede—a different color for each perfume.

TUVACHÉ

PEGGY SAGE

Peggy Sage's "Slumber Bundle" is a bundle of tricks to be taken off to bed to turn out softer, smoother hands. The tricks are simple, a rich hand cream and a pair of cotton gloves. Slumber Bundle is a displayable, eye-catching package, in pink and silver.

PEGGY SAGE

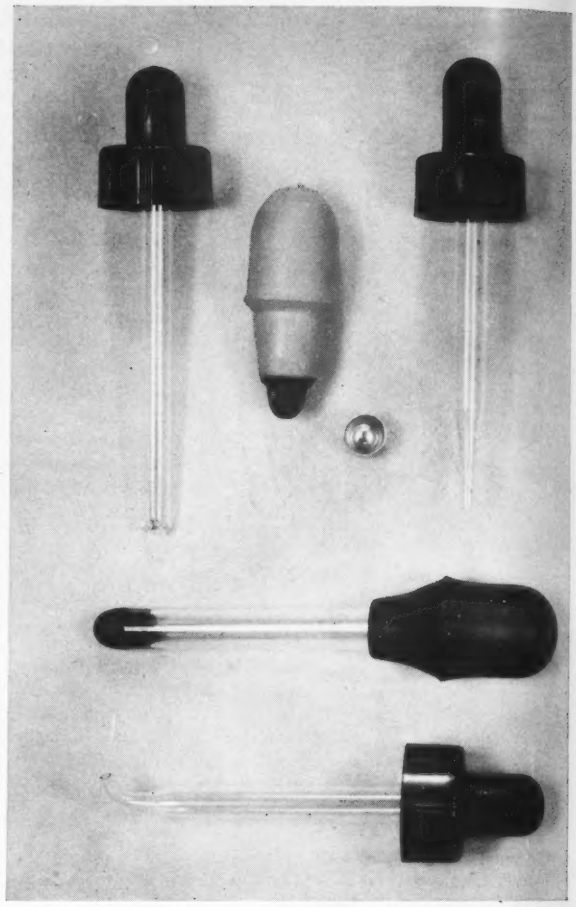
• You'll find the leaders in drug, cosmetic, petroleum industries choosing LUSTEROID rigid cellulose vials and tubes for their most exacting packaging and sampling assignments.

• The reasons are easy to find: LUSTEROID is a plastic material with real merchandising punch. Transparent or opaque, it is available in any color, shade or tint. Multicolor labelling is done integrally as part of the manufacturing process.

• LUSTEROID is strong, too. It is practically unbreakable. And it is extremely lightweight—75% to 80% lighter than equivalent glass. These two features make LUSTEROID packages extremely economical to pack and ship.

A note or phone call will bring an answer to your packaging problem

LUSTEROID CONTAINER CO., INC.
Formerly Lusteroid Division of The Sillcocks-Miller Company
12 Parker Avenue, West
SOUTH ORANGE, NEW JERSEY



QUALITY IN ANY QUANTITY

The highest quality droppers, atomizing droppers and vest pocket atomizers are available for immediate delivery in any quantity. If you have a packaging problem why not consult us? We are specialists in the glass ware field. Write for our catalog showing the latest developments in closures, fittings and applicators; or, we will be glad to send you samples and prices.

GLASS PRODUCTS CO.
GLASSWARE
VINELAND • NEW JERSEY

F.T.C. ACTIVITIES

Complaints

Women's Remedies

The F. T. C. has issued a complaint against Harry S. Benham, Chicago, alleging misrepresentation of medicinal preparations and devices. In the sale of these products the respondent trades under the names The Zone Company, Active Merchandisers, Active Medicine, Nu-Mode Company, and American Medicine Company.

The complaint alleges that respondent represents that his preparations, "Nu-Mode Vaginal Jelly," "A. M. Vaginal Jelly," "Nu-Mode Hygiene Tablets," "Vaginal Suppositories," and "Speed Nu-Mode Hygiene Douche Tablets" form safe, competent and effective preventives against conception and provide a guaranteed method of preventing pregnancy, due to their antiseptic and powerful germ-destroying properties; that their use prevents disease, and that they are effective as prophylactics, when in fact the respondent's preparations, although they may possess antiseptic properties, are not powerful germicides and do not accomplish all the results claimed.

The complaint alleges that respondent represents the "Nu-Mode Ladies' Womb Supporter" as being comfortable, efficient and sanitary, when in fact the use of this device as advertised disregards gynecological principles.

Further misrepresentations have been made by the respondent, according to the complaint, in connection with the sale of "A. M. Athlete's Foot Salve" and "A. M. Wonder Salve" for skin irritations and ailments.

Not Self-Sterilizing

American Bandage Corporation, Chicago, manufacturer of a so-called self-adhering medicated bandage sold and distributed under the trade name "ABC Gauzband," is charged with misrepresentation.

The complaint alleges that the respondent represents:

"Through the development of a secret process, used exclusively by the manufacturer, gauzband is medicated with an antiseptic and germicidal material, rendering it self-sterilizing. It will remain sterile even after it is removed from the package."

The respondent represents that the product has been impregnated with certain materials which give it antiseptic and germicidal properties sufficient to inhibit the growth of, and to destroy, all types of bacteria, thereby making the product self-sterilizing and causing it to remain surgically sterile after it has been removed from the package. These representations, the complaint alleges, are false and misleading, as the product is not self-sterilizing and will not remain sterile after it has been removed from the package.

Just Mild Diuretic

E. B. Hall, trading as E. W. Hall, St. Louis, according to complaint, represents that his product "Texas Wonder," constitutes a cure or remedy for, and possesses substantial therapeutic value in the treatment of, kidney and bladder disorders, including inflammation of the bladder and kidneys, stones in the kidneys and tuberculosis of the kidneys, diabetes, rheumatism, swollen joints, weak and lame back, pains in the back and lumbago.

The complaint alleges that respondent's product does not produce the results claimed, and that the preparation does not have therapeutic value in the treatment of the ailments mentioned, in excess of such slight symptomatic relief as it may afford in cases of swollen joints and pains in the back, by reason of its properties as a mild diuretic.

Serutan Claims Cited

Healthaids, Inc., Jersey City, N. J., according to complaint, sells and distributes "Serutan" and The Journal of Living Publishing Corporation, New York, disseminates "The Journal of Living," which is used, among other things, for the advertisement of "Serutan."

The Commission complaint charges these corporate respondents and Victor H. Lindlahr, editor of the publication, with representing that "Serutan" has substantial therapeutic value in restoring and maintaining natural elimination; that it stimulates and strengthens, and promotes normal and regular action on the part of, the digestive and eliminative organs and muscles, and that it constitutes a cure or remedy for, and possesses substantial therapeutic value in the treatment of constipation.

The complaint alleges that the preparation "Serutan" has no therapeutic value with respect to restoring or maintaining natural elimination; that it is not capable of accomplishing the results claimed; that it possesses no therapeutic value in the treatment of constipation except insofar as its laxative properties may assist in the temporary evacuation of the intestinal tract; that the active ingredient of the preparation consists of the mucilaginous portion of psyllium seed, and that the presence of this ingredient serves to give the preparation the properties of a mild laxative, aside from which properties the product is wholly without therapeutic value.

Stanley's Drug Store

Charging misrepresentation in the sale of medicinal preparations, the F. T. C. has issued a complaint against Stanley Sikoparija and Sophia Strboya Sikoparija, trading as Stanley's Drug Store, Orange, Texas.

The complaint alleges that respondents have advertised various preparations as cures or remedies for, or competent treatments of, a wide range of diseases and ailments for which such preparations in fact have little or no therapeutic value.

Among the preparations so advertised, according to the complaint, are "Ulcidine," "Bako Herb Tea," "Nervotone," "Tengo," "Vital Prescription Powders," "Kombin," "Diabetol Powder," "Epilepton Herb and Medicine," "Expello," "Reumalin," "Lift Extract," "Lift Tablets," "Lift Doushe Powder," "Lodol Powder," "Nokohol," "Rin," and "Melena."

The complaint further alleges that the respondents' advertisements with reference to "Nervotone," "Tengo" or "Slite Reducing Tablets," "Kombin" and "Epilepton" constitute false advertisements because failing to reveal that the use of such preparations under the conditions prescribed in the advertisements or under such conditions as are customary or usual, may result in serious and irreparable injury to health.

Gland Estemeter

The F. T. C. has issued a complaint against Gland Estemeter Corporation and William Estep, its president, Chicago.

The complaint alleges that prior to October 31, 1939, the respondents sold a device known as "Gland Estemeter"; that they represented that all ailments and diseases result from improper or abnormal functioning of the glands; that the respondents' device would detect such improper functioning, reveal any vitamin deficiency, or whether the condition of the body was acid or alkaline, and disclose the condition of the blood with respect to energy and activity and analyze and disclose any impairment of the mental processes.

The complaint alleges that many diseases are not caused by improper functioning of the glands; that even in those cases where there may be such improper functioning, the respondents' device, an ordinary electric battery arrangement, would be incapable of detecting or disclosing such condition; and that use of the device will not accomplish the other results claimed.

HYCOLOID
AND
CLEARSITE
CONTAINERS

80% lighter than glass
Seamless and unbreakable
Labels imprinted directly on container
Any color or color combination — transparent or opaque

Drop us a line or phone for samples, quotations, information.

FIRST IN CELLUPLASTICS HYCOLOID - CLEARSITE

CELLUPLASTIC CORPORATION

Executive Offices & Factory: 44 Avenue, L—Newark, N.J., Market 2-4544
N. Y. Display Office 626 Fifth Avenue, New York City

OUR SALES RECORD
Your Guarantee!

Yes, KELTON LIPSTICKS are fully protected by product liability insurance—but the KELTON sales record guarantees you more than a satisfactory product. It guarantees you the consumer appeal so necessary to repeat sales.

KELTON'S customers are as steady as the sales of the lipsticks themselves . . . and for good reason. Houses putting their labels on KELTON LIPSTICKS have come to appreciate through experience that the KELTON repeat-sales claim becomes an *actuality* in retail establishments.

Samples of KELTON LIPSTICKS are yours for the asking. Only by actual test and comparison can you adequately judge them.

KELTON
COSMETIC CO.

43 West 27th Street
New York, N. Y.

819 Santee Street
Los Angeles, Calif.

Lipstick—Rouge—Eye Shadow—Mascara—Powder—etc.

● HAVE YOU seen the new KELTON Castor Oil Free Lipstick? It has a unique appeal with which you should be familiar.

Use LABELS AND SEALS

FAITHFUL by SERVICE

JOHN HORN
837-839 TENTH AVENUE
NEW YORK N.Y.
FOR OVER FIFTY YEARS

for greater sales appeal

METAL · EMBOSSED
ENGRAVED
DIE STAMPING FOR BOXMAKERS

Stipulations

Vitamins Plus to Stop

Vitamins Plus, Incorporated, New York, has agreed to cease representations of "Vitamins Plus."

The respondent agrees to cease representing that cloudy or lusterless eyes or lack of whiteness of the teeth are generally due to Vitamin A deficiency; that vitamins are of significance in determining the duration of time hair stays in curl, or make-up remains on the skin surface, or nail polish adheres to the nails; that Vitamin B will maintain or nourish brain tissue, or will remove lactic acid from the blood stream and thereby eliminate fatigue, or is of value in cases of constipation or nervous disorders, except where and to the extent that such cases may be due to insufficient Vitamin B; or that foods customarily consumed have but a negligible amount of Vitamin B.

Other representations which respondent agrees to discontinue are that Vitamin E is known to be capable of preventing sterility or promoting mental or physical vigor; that by use of "Vitamins Plus," a person may expect to have sparkling eyes, or gleaming or lustrous hair, or a lovely complexion, or that one may become active, gay, beautiful, or charming, or live without a "let-up" or "let-down."

Peano-Oil Claims

Peanut Products Company, Tuskegee, Ala., has stipulated to cease representing that "Peano-Oil" will result in healthy hair, restore the natural oil to the hair, prevent hair from falling out or becoming brittle, restore the natural sheen or luster, or prevent baldness; that "Peano-Oil" penetrates to roots of hair or affords nourishment to scalp; that it is the discovery of an eminent scientist; that anything contained in "Peano-Oil" will grow hair, or that salesmen of "Peano-Oil" earn any profit in excess of the amount that is actually earned by such salesmen.

Bilaphen Claims Stopped

Victoria Chemical Company, Newark, N. J., has agreed to desist from representing that "Bilaphen Tablets" will enable one to say goodbye to a distressed feeling resulting from an upset stomach, or that it will be of aid in relieving an upset stomach unless this representation is limited to relieving that condition when due to constipation. The respondent also agrees to cease advertising that its preparation will cause the liver to return to normal functioning or will keep it functioning normally; that the product will cause normal or natural movements, and that the respondent manufactures its product or maintains a laboratory.

Yardley Stops

On stipulation of the parties, the petition for review of the Commission's order in this case was withdrawn on September 13 from the Second Circuit (New York). It had been filed February 15, 1940.

The order, which was issued in December, 1939, directed the petitioner, in connection with the sale and distribution in interstate commerce of toilet requisites and cosmetics, to cease and desist from representing, through the use of the words "London," "English," or "Old English," or through the use of any other words, phrases, symbols or picturizations indicative of English origin, or through any other means or device, or in any manner, that any of the aforesaid toilet requisites and cosmetics which were in fact made, compounded, diluted, or bottled in the United States, or in places other than England, were made, compounded, diluted or bottled in England or are of English origin; provided, however, that the country of origin of the various ingredients thereof may be stated when immediately accompanied by a statement that such products were made, compounded, diluted or bottled, as the case may be, in the United States or in such place other than England.

The occasion for the Commission's acquiescence in this method of disposition of the case was the filing by the corporation concerned of a report indicating compliance with the Commission's order.

Lucone to Stop

Lucone, Inc., New York, distributor of "Lucone Herb Tonic", has agreed to cease using the word "Herb" as part of the trade name of its product, and from representing its product as an herb tonic containing no greasy substances and capable of promoting or assuring a robust or abundant growth of hair; as preventing baldness or dandruff, saving the hair or stopping hair loss, and keeping the hair roots active. The respondent also agrees to cease advertising that its product is of aid in correcting unhealthy scalp conditions, keeps the hair free of infection, or preserves the scalp.

Rheumatism Remedy Stopped

Trading as J. H. Dornheggen Medicine Company, J. H. Dornheggen, Cincinnati, agrees to cease representations of "Peerless Rheumatism Remedy."

The respondent agrees to cease representing, by use of the word "Remedy" or other words of similar import in the trade name of the preparation or in any other manner, that the product is a competent remedy or an effective treatment for rheumatism or has any therapeutic value in such treatment in excess of affording temporary relief for the symptoms in cases of rheumatoid arthritis.

Other representations to be discontinued are that the preparation is a competent remedy or effective treatment for arthritis, neuritis, sciatica, lumbago, neuralgia, or "Rheumatic Pains of the Kidneys"; that it has any therapeutic value in the treatment of these ailments in excess of affording temporary symptomatic relief; that it prevents relapses or recurrences of rheumatic pains, or that the preparation is a discovery.

Hair Grower

Mrs. C. T. Hall, 4610 Champlain Ave., Chicago, selling "Palm Beach Hair Grower" and "Palm Beach Pressing Oil," agrees to cease representing that Palm Beach hair preparations makes the scalp healthy; that the hair regains its vitality or that new life appears or can be seen in the strands of the hair; that Palm Beach Hair Grower is beneficial to the roots of the hair; is a competent treatment or effective remedy for diseased or itchy scalp, or for dandruff, or that it heals such conditions.

The respondent further agrees to cease using the word "grower", or any words of similar import or any letters, word or syllable that simulate "grower" in sound or spelling, on the label of the containers, or as a part of the trade name of any of the products.

Egyptian Herb Tea

Ralph E. Pritchard, trading as Egyptian Herb Tea Company, Akron, Ohio, agrees to cease certain representations of "Egyptian Herb Tea."

The respondent agrees to cease representing that his product is a competent treatment or effective remedy for obesity, is efficacious in the treatment of rheumatism, kidney trouble, high blood pressure, indigestion, gas on the stomach, pyelitis, backache, or any other affliction or condition aside from constipation; that priests or wise men of ancient Egypt have worked marvelous cures, or any cures, with the herbs contained in such compound and that Egpytian Herb Tea is a tonic.

Among other representations to be discontinued are the assertions that his preparation is a blood purifier; that it is the safest or quickest way to proper elimination, and that the respondent is an importer of herbs or any other commodity.

Tampax to Stop

Tampax, Inc., New York, a corporation engaged in selling a tampon designated "Tampax," will discontinue representations that there is a consensus among gynecologists to the effect that there is no comparison between "Tampax" and the external sanitary napkin from a hygienic standpoint; that the American Medical Association has examined and accepted "Tampax" for advertising, or that physicians as a group have endorsed the product.

CALCO

Basic Source for Bulk Pharmaceuticals

Control of quality begins for Calco Bulk Pharmaceuticals with the production of basic "raw" materials in especially designed equipment such as this light oil refining plant at Bound Brook.

● Unified responsibility for quality at every step in production—assurance of adequate supplies through high normal capacity—are obvious advantages of looking to a basic source such as Calco for your bulk pharmaceutical requirements.

Nicotinic Acid U.S.P.	*Methylene Blue U.S.P. (Powder—Crystals)*
Sulfanilamide U.S.P.	*Calcium Mandelate*
Cinchophen NF	*Guanidine Hydrochloride*
Neocinchophen U.S.P.	*Diethylamide of Nicotinic Acid (Nikethamide)*
Glutamic Acid HCL	*Saligenin*
Aminoacetic Acid N.N.R.	*2-Methylnaphthoquinone*
Mandelic Acid U.S.P.	
Nicotinic Acid Amide	

INTERMEDIATES

Tertiary Amyl Urea	*Tertiary Butyl Urea*

Certified Colors for Pharmaceutical Use

Pharmaceutical Department
CALCO CHEMICAL DIVISION
AMERICAN CYANAMID COMPANY
BOUND BROOK Calco NEW JERSEY

Silky and Smooth to the Last Drop!

. . . when you use Penn-Drake White Oils for your base

Because Penn-Drake White Oils have a greater affinity for the other materials you use, your creams are smoother, have added penetrating power, increased cleansing power.

And because Penn-Drake White Oils *retain* their desirable odorless, colorless, tasteless characteristics *permanently*, your creams stay silky and smooth TO THE LAST DROP . . . do not shrink or crack in the jar . . . do not become discolored or develop an unpleasant odor.

Standardize on Penn-Drake, the White Oil that costs no more, yet helps your creams "retain their School-girl Complexion." Write for full details today.

penn drake petroleum products

PENNSYLVANIA REFINING CO.

GENERAL OFFICES: BUTLER, PA.

BRANCH OFFICES: CLEVELAND, OHIO SCRANTON, PA. JERSEY CITY, N. J.

Refineries at Karns City and Titusville, Pa.

Sales Offices and Warehouses at: New York · Chicago · Boston · Philadelphia Atlanta · Petersburg, Va. · Dallas, Texas · Detroit · St. Louis · Los Angeles

Manufacturers of:

White Oils—U.S.P. and Technical	Gasoline
Petrolatums (all grades and colors)	Rubber Solvents
INSECTI-SOL (deodorized base)	Motor Oils and Greases—branded and unbranded
Mahogany Sulphates—Soaps	Industrial Lubricants and Greases
Waxes	High Flash Lubricants
Naphthas—P. & M. Naphtha and Dry Cleaning Naphtha	Neutral Oils
Kerosene	Bright Stock

Fuel Oils—Furnace Oil and Burning Oil

Face Cream Claims

Beatrice Mabie, Inc., selling "Beatrice Mabie's Pore Cream," has agreed to cease representing that the preparation will clear the skin of blackheads or banish blackheads, or by any other terminology that it will remove blackheads permanently, or that it has any effect upon blackheads beyond tending to soften temporarily the sebum in the pores; that the product will reduce or contract enlarged pores or is a competent treatment for enlarged pores; that it was "created by one of America's five most expensive beauty experts"; that it has any special ingredients or acts in a way different from competing products; that a single application will remove dust, dirt or make-up embedded in the pores for days or weeks, or that blackheads or enlarged pores are due to faulty diet or to a skin condition requiring daily correction.

Permanent Wave Claims

Rilling-Arnao Company, Minneapolis, agrees to cease representations of its "Rilling Koolerwave," a hair waving device of the machineless type, and "Rilling Concentrator," a hair dryer.

The respondent agrees to cease advertising that a permanent wave given with Rilling Koolerwave equipment starts at the scalp or is one-half inch closer, or closer by any definite measurement, than any other method; that all methods of permanent waving other than the Rilling Koolerwave injure the hair; that this equipment or the results represented as attainable by its use, or the features represented as attributable to it, are guaranteed, unless the true nature and extent of such guarantee are clearly and adequately disclosed; and that tests of all hair dryers on the market have demonstrated that the Rilling Concentrator costs less to operate, dries heads at less cost, or dries hair faster than any other hair dryer.

Dr. Williams Pink Pills

W. T. Hanson Company, Schenectady, N. Y., agrees to cease advertising that "Dr. Williams Pink Pills" build blood, aid breathing, restore underweight persons to normal weight, render one less susceptible to colds or diseases, enable every gland, organ or muscle to function better, and are a competent treatment or effective remedy for fatigue, "fatigue anemia," and certain conditions caused by the menopause or puberty. The respondent corporation stipulates that it will cease representing that a low blood count is due only to red corpuscle deficiency; that pimply skin indicates an iron deficiency, or that the use of Dr. Williams Pink Pills will clear the skin.

Orders

Wain's Compound Stopped

Wain's Laboratory, Inc., Hollywood, Calif., distributor of a preparation formerly designated "AMA-GON" and now called "Wain's Compound," has been ordered to cease misrepresentations.

The Commission finds the respondent has represented that the preparation is an effective and competent treatment for bronchial asthma and bronchial coughs, when such is not a fact, and that it is entirely safe and harmless and may be used without danger of ill effects upon the health of the user. According to findings, the preparation contains potassium iodide in quantities sufficient to cause, in some instances, injury to health if taken under conditions prescribed in the advertisements or under such conditions as are customary or usual.

The respondent is ordered to cease dissemination of any advertisement which represents that the preparation has any therapeutic value in bronchial asthma or bronchial coughs in excess of furnishings temporary symptomatic relief from the paroxysms of asthma and bronchial irritations; that the preparation is in all cases safe or harmless; or which advertisement fails to reveal that the preparation should not be used by those having tuberculosis or goiter (provided, however, that such advertisement need contain only a statement that the preparation should be used only as directed on the label thereof, when such label contains a warning to the effect that the preparation should not be used by those having tuberculosis or goiter.)

Dr. Pierre Chemical Co.

Dr. Pierre Chemical Co., Chicago, manufacturer of medicinal preparations known as "Dr. Pierre's Boro-Pheno-Form Vaginal Suppositories" and "Dr. Pierre's Boro-Pheno-Form Vaginal Creme," has been ordered to cease misrepresentation of its products.

The Commission finds that the respondent represented that its products are competent and effective preventives of conception; competent and effective germicides; that they possess substantial therapeutic agents which heal irritated tissues and membranes, and that the products have been approved and are recommended by a substantial number of reputable physicians.

The Commission also finds that the products possess antiseptic ingredients of low toxicity, and are not competent or effective germicides generally, and that no substantial number of reputable physicians have approved or recommended the products.

The respondents are ordered to cease disseminating any advertisement which represents that the products are generally or in the majority of cases competent or effective preventives of conception; that they are competent and effective germicides generally; that they contain any substantial therapeutic agents or properties which will serve to heal irritated tissues or membranes, or that they have been approved or recommended by any substantial number of reputable physicians.

Clito Claims Stopped

Clito Company, San Antonio, Tex., is ordered to cease disseminating false advertisements of "Clito Emmenagogue Capsules" and "Rayo De Sol."

Commission findings are that the respondent disseminated, in various States, newspaper and other advertising matter in which he represented that his preparation, "Clito Emmenagogue Capsules", is a competent and effective treatment for delayed menstruation and is safe and harmless.

According to findings, respondent's preparation is neither competent nor sufficient in treating this condition; nor is it safe or harmless, in that it contains certain drugs in quantities sufficient to cause serious and irreparable injury to health if used under the conditions prescribed in the advertisements or under such conditions as are customary or usual.

The respondent is further found to have engaged in the dissemination of false advertising matter in that his advertisements failed to reveal that use of the preparation under such conditions may result in injury to health.

Findings are further that the respondent disseminated advertisements that "Rayo De Sol" is a competent and efficient cure for, and possesses therapeutic value in the treatment of, cataracts, cloudiness of vision, film carnosity, ulcers, and inflammation of the eyes, when such are not the facts.

The Commission order directs the respondent to cease disseminating advertisements which make such representations concerning the two preparations, directly or through inference; or which advertisements of "Clito Emmenagogue Capsules" fail to reveal that use of the preparation may cause gastro-intestinal disturbances and excessive congestion and hemorrhage of the pelvic organs, and, in the case of pregnancy, may cause uterine infection and blood poisoning.

Reducing Product Stopped

Judge Burke, in the U. S. Circuit Court for the Western District of New York (Rochester), has issued an order restraining Julius Miller, trading as Miller Drug Company, Rochester, N. Y., distributor of "Belite," "Reducers" and "Miller's Reducing Preparation" from further dissemination of false advertisements.

The court ruled that the preparation is advertised by the defendant as a safe,

competent and effective cure or remedy for obesity or the reduction of bodily weight, and that the advertisements fail to reveal that use of the preparation under conditions prescribed in the advertisements or under such conditions as are customary or usual may result in serious or irreparable injury to health in that it accelerates the rate of metabolism, thereby burning the body tissues in excess of that which is normal, causing permanent injury to the heart, thyroid gland and other vital organs.

Blanche Kaplan Stopped

The F. T. C. has ordered Blanche Kaplan, trading as Progressive Medical Company, Progressive Laboratories, Ladies Aid Company, Ladies Aid, and Ladies Aid Products, Chicago, to cease misrepresentations of several medicinal preparations.

The order directs the respondent to cease advertisements which represent, directly or through inference, that the product "Ladies Aid No. 1 H. Y. G. Tablets" is an effective prophylatic or dependable contraceptive; that "Ladies Aid No. 4" possesses therapeutic value in the treatment of certain ailments of women beyond its use as an accessory; that "Promeco Cod Liver Oil Compound Tablets" is a new scientific discovery and constitutes an effective remedy for every condition for which physicians might prescribe cod liver oil; that "Ladies Aid Reducing Tablets" is an amazing new scientific discovery, or that it is safe and harmless, or that by its use one can reduce 5 pounds a week, or any other appreciable amount.

The order also prohibits the dissemination of advertisements with respect to "Ladies Aid Reducing Tablets" which fail to reveal that use of this product may result in skin eruptions and excessive irritation of the bowels.

Fake Soaps

Lawrence L. Keller, trading as United Soap Company, Seattle, has been ordered to cease misrepresentation of his products.

The Commission finds that respondent is engaged in selling soap under the brand names "Hot Springs Mineral Soap," "Hawaiian Rose," "Velvette" and other similar names, and that he changes each of the names under which he sells soap as the demand for the soap under a given name has declined. All of the soap, regardless of the name under which it is sold, is manufactured at the respondent's place of business in Seattle, and is made by the same formula.

The respondent represents, according to findings, that the "Hot Springs Mineral Soap" is "vitamized" and imported by "Union Soap Company, Importers," represented as having offices in New York, Los Angeles and San Francisco, and that "Creme Savon" soap is medicated and is manufactured and sold by the "Wilson Soap Co." of San Francisco. Findings also are that none of the soap is vitamized or medicated; that the price of 75c, printed by the respondent on the boxes of soap, is wholly fictitious and greatly in excess of the actual value and selling price, and that the soap is not high quality toilet soap, but is inferior in grade and quality and is regularly sold by the respondent to peddlers and canvassers for approximately 5 cents per box of soap and a box of washing powder. These peddlers or canvassers in turn sell and distribute the soap and washing powder to ultimate consumers by house-to-house canvass, usually for 25 cents for a box of soap and a package of washing powder.

The respondent is ordered to cease and desist from representing, through use of fictitious names and addresses or through the use of different brand or trade names, that he sells more than one grade or quality of soap; that it is imported or is manufactured in any place other than at the respondent's place of business in Seattle; that the soap is vitamized or medicated in any way, or that it has any medicinal or curative value, or that it is in any manner more beneficial than any ordinary toilet soap. The respondent is also ordered to cease representing that the soap retails for or has a retail value of any price in excess of the usual and customary price at which the soap is sold to ultimate users, or that it is other than ordinary toilet soap.

Answers

Clara Stanton Answers

Clara Stanton, Druggist to Women, Denver, has filed an answer to the complaint issued by the F. T. C. which charged misrepresentation in connection with the advertising of Anti-Fat Tablets.

The complaint alleged that the respondent falsely represented that the preparation is a cure, remedy or competent and effective treatment for obesity and that the advertisements disseminated by the respondent constituted false advertisements by reason of the failure to reveal that the use of the preparation, which contains potassium iodide, may result in injury to the health.

The answer admits all jurisdictional facts and that the advertisements in question were disseminated, but denies that they are false, misleading or deceptive and affirmatively declares that the product is not harmful to the normal woman and is safe and harmless when excess weight is caused by the usual factors. The respondent also denies having represented that the product is a specific or universal remedy for obesity and states affirmatively that the tablets have a marked therapeutic value in the treatment of obesity and are effective in reducing excess weight in the cases for which they are recommended in respondent's literature.

The respondent also in her answer sets up that she has hitherto signed a stipulation with reference to the advertising of this product and that she has not violated the same.

Gates Medicine Answers

Gates Medicine Company, Inc., of Charleston, W. Va., has filed an answer to the complaint charging dissemination of false advertisements of White Ribbon Remedy and Improved White Ribbon Remedy, medicines intended for use in overcoming the liquor habit or in treating disorders caused by excessive use of alcoholic beverages.

The answer filed by Gates Medicine Company, Inc., states it is no longer engaged either in advertising or selling White Ribbon Remedy, having stopped the sale thereof when it was advised that its advertisements were violative of the Federal Trade Commission Act. The answer further states that the respondent is now selling the preparation Improved White Ribbon Remedy, which contains no dangerous or harmful drug such as tartar emetic, and that the advertisements with respect to such preparation do not suggest or represent that it will effect any cure or give any relief other than that scientifically established. The respondent further requests that the complaint be dismissed for the reason that it has discontinued the sale of the preparation White Ribbon Remedy containing tartar emetic.

Vita-Ray Answers

Sterling Products, New York, and Vita-Ray Corporation, Lowell, Mass., have each filed an answer to the complaint recently issued by the Federal Trade Commission. The complaint alleges that the Sterling Products Company and its subsidiary, the Vita-Ray Corporation, in disseminating advertisements concerning their cosmetic products are falsely and misleadingly representing that such products supply a basic need for the health of the skin because they contain Vitamins A and D and that the local application of such cosmetics stimulates and nourishes the skin and relieves vitamin deficiencies which may be manifested by dryness of the skin, lines and wrinkles.

The respondent Sterling Products denies the dissemination of such advertisements and states that it has at no time mentioned in the complaint engaged in the sale, distribution or advertising of such products, and further denies the allegations of the complaint with respect to the properties of the cosmetic preparations described.

The Vita-Ray Corporation in its answer admits the use of the advertisements described in the complaint. It specifically denies that the representations are false, misleading and grossly exaggerated.

U.S.I. ALCOHOL NEWS

November ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1940

ALCOHOL BOOSTS POLISH QUALITY

Improves Wetting and Detergent Action, Aids Emulsion Stability

Car and furniture polishes of superior quality can be formulated with the aid of alcohol, it is reported. Polishes consist essentially of a mineral oil, alcohol, and water in an emulsion with a water-soluble gum which acts as an emulsifying agent. The alcohol, it is said, increases the wetting and detergent action of the polish and actually improves the stability of the emulsion. In addition, the alcohol wets the water-soluble gum, increasing its dispersibility. It also acts as a gum preservative to prevent fermentation, which would make the polish useless and cause bulging of metal containers or breakage of glass. A still further advantage of alcohol is that it prevents freezing during storage and transportation. It is said that these advantages can be obtained with as little as 15% solution of alcohol, based on the water content. Solox, U.S.I.'s proprietary alcohol-type solvent, is frequently used in polishes of this type.

Manufacturers of automobile and furniture polishes find many advantages in the use of alcohol. Features of polishes containing alcohol include prevention of freezing or of gum fermentation.

ALCOHOL FINDS COUNTLESS USES IN PHARMACEUTICALS

External pharmaceuticals offer plenty of applications for alcohol, of which tincture of iodine is but a single instance. U.S.I. produces S.D. Alcohol in two formulas authorized for use in this popular antiseptic. 19 formulas of S.D. Alcohol are authorized for use in external pharmaceuticals not U.S.P. or N.F. The rigid care exercised by U.S.I. in the production of alcohol and the testing of denaturants give assurance of the quality needed for the manufacture of external pharmaceuticals.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

An aromatic chemical now being produced in this country is said to be an almost exact counterpart of jasmone, and to have a more powerful and tenacious odor than the natural product. **(No. 390a)**

A cosmetic container recently patented is said to be designed to hold both perfume and lipstick. It is reported to consist of a perfume flacon with a cap adapted to hold the lipstick. **(No. 391a)**

A synthetic civet powder has 8 times the strength of the natural product, according to the maker. ½ ounce per gallon of alcohol gives a product equivalent in strength to the standard civet tincture, it is said. **(No. 392a)**

Vitamin D is now being manufactured commercially under license at extremely low cost, it is reported. It is said that the product is being used in breakfast cereals. **(No. 393a)**

A printing unit is especially adapted to imprinting code numbers or symbols on labels for the drug, cosmetic, and food industries, according to the maker. **(No. 394a)**

A new concentrate is capable of producing an absorption base with 33 per cent greater water absorption than the usual types, is compatible with both acids and alkalies, it is claimed. **(No. 395a)**

A mint perfume oil is said to be especially suitable for use in men's toilet preparations, such as shaving creams, powders, and after-shave lotions. **(No. 396a)**

A floral oil is said to suggest the odor of spring flowers, such as lilac, lily, and magnolia, and to be adapted for use in perfume extracts, toilet waters, powders, and creams. **(No. 397a)**

An all-purpose cleaner is said to dissolve grease and film and remove dirt from metal, tile, porcelain, painted surfaces, or varnished floors. Maker says that synthetic solvents employed act as antiseptic and deodorant. **(No. 398a)**

U.S.I. ALCOHOL QUALITY AIDS DEODORANT EFFECTIVENESS

Sales appeal of deodorant liquids and creams is boosted by the use of U.S.I. Alcohol. Alcohol in deodorant formulation is useful in increasing evaporation rate and as a solvent for the perfume. 10 formulas of S.D. Alcohol are authorized for use in deodorants.

CHART GIVES DATA ON ALCOHOL-WATER MIXTURES

A convenient chart lists boiling points, dew points, and freezing points of alcohol-water mixtures. For copies of this chart write U.S.I. Ask for Bulletin BP.

U.S.I. INDUSTRIAL CHEMICALS, INC.
60 EAST 42ND ST., NEW YORK (USI) BRANCHES IN ALL PRINCIPAL CITIES
INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

RECTIFYING PROCESS ASSURES PURITY OF U.S.I. ALCOHOL

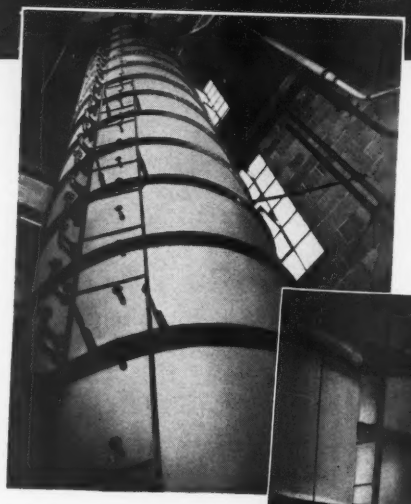
No. 5 OF A SERIES ON THE CONTROL AND TESTING OF U.S.I. ALCOHOL

AFTER passing from fermenters to distillation units, U.S.I. Alcohol is *redistilled* in rectifying units to remove the small quantities of impurities that still remain.

As the alcohol runs from rectifying stills through tail boxes, it is constantly checked for proof and purity. U.S.I. Alcohol is a chemical of such exceptional purity that elaborate tests must be applied to assure the maintenance of U.S.I. standards—and many of these tests have been specially developed by U.S.I. out of its long experience in alcohol manufacture.

This constant care in manufacturing and testing assures you of the alcohol qualities you want —helps give your product the qualities that will win prestige with your customers.

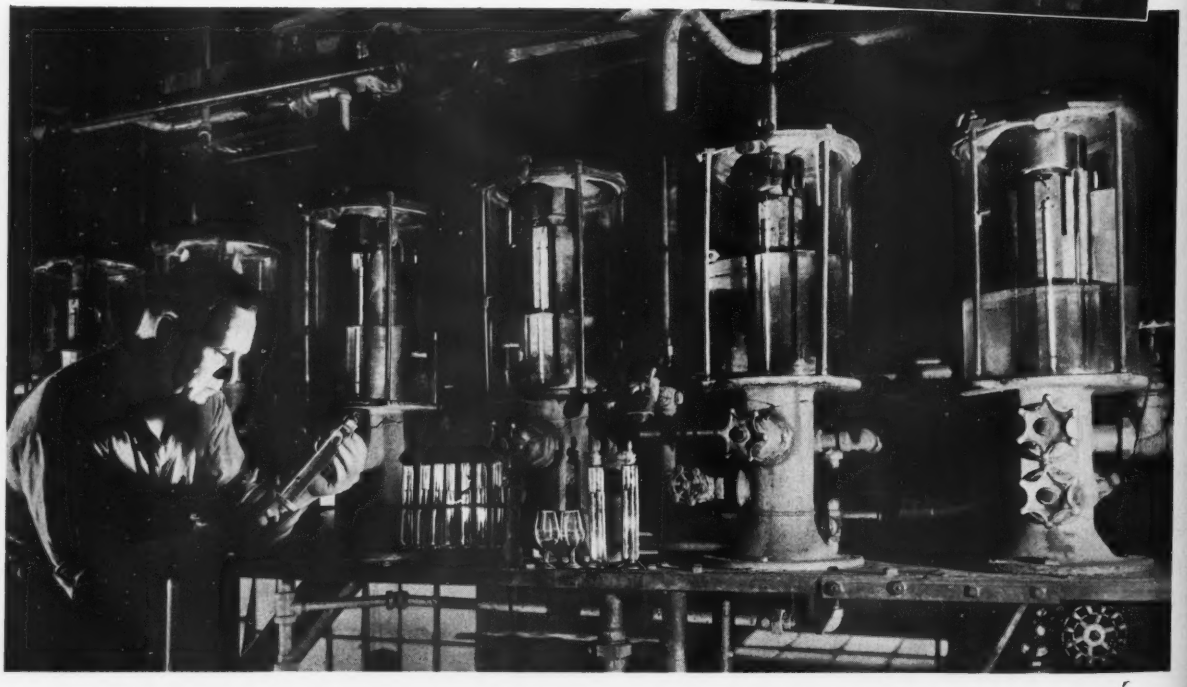
U. S. INDUSTRIAL CHEMICALS, INC.



◀ One of a group of beer stills in which U.S.I. Alcohol is separated by steam distillation from the residue of the fermentation process.

▶ From the beer stills the alcohol passes to rectifying units, where a second distillation process still further increases the purity.

▼ At the tail boxes, U.S.I. Alcohol is tested for proof, odor, and freedom from impurities.



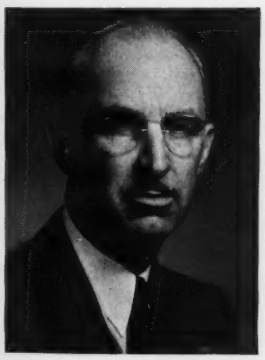
NEWS

Companies

Harker to Australia

Harvey M. Harker, assistant general manager of sales of the organic chemicals division of Monsanto Chemical Co., is going to Australia where he will conduct a chemical market survey of Australia, Tasmania, and New Zealand.

Last April Monsanto entered into an agreement with the Maurice A. Nicholas interests of Australia to establish facilities at South Melbourne under the name Monsanto Chemical, Proprietary Ltd., for the manufacture of acetophenetidin, sodium salicylate, salicylic acid, aspirin and other pharmaceutical chemicals. Plans for the manufacture of sulfuric acid and phenol have since been under consideration. Mr. Harker will assist in the development of production facilities for these products. He will remain in Australia for about a year.



HARVEY M. HARKER

Mr. Harker is a chemical engineering graduate of the University of Wisconsin with twenty-eight years of experience in the chemical industry. He has been process operator, department superintendent, assistant plant manager, purchasing director and sales manager, and his career includes service with General Chemical Co., Lambert Chemical Co. at Lake Charles, La., Iowa Soda Products Co., and Monsanto.

Polak Frutal to Build Here

Jacob Polak, president of Polak's Frutal Works, Inc. and its affiliated companies in Holland, France, and England, accompanied by Mrs. Polak, arrived in New York from Europe by way of Havana on September 25 aboard the SS Marquessa Comillas.

Mr. Polak happened to be in Paris on a business trip when the invasion of Holland took place. From there he made his way to Bordeaux, and thence to Marseille, witnessing much of the retreat of the French en route. After many additional hardships, he and Mrs. Polak managed to reach Bilbao where American visas previously sent from here awaited them.

Mr. Polak plans to make his home in New York and plans for the expansion of the Long Island City plant are already under way. This increase in the facilities of the organization has been made necessary by the growing demands of the domestic business, as well as that of the tremendous export trade which was formerly handled by the Holland company.

A. H. Micheels, manager of the Paris branch, and Mrs. Micheels arrived with Mr. and Mrs. Polak. Mr. Micheels, and several other members of the European staffs, who are at present in New York, will assist in the plans for enlarging the scope of Polka's Frutal Works, Inc.

John ter Veer, secretary and Eric Vles, treasurer, will continue in active charge of the New York office.

New Offices

Coventry Soap Co., manufacturer of soaps and perfume novelties, has opened a new office and showroom at 1239 Broadway, New York, under the direction of Milton E. Feldman.

Mallinckrodt Advances Keutzer

Walter S. Keutzer has been appointed western divisional sales manager of the wholesale drug division of Mallinckrodt Chemical Works, St. Louis. Mr. Keutzer, who has been associated with the company since 1909, will make his headquarters at the home office in St. Louis.

McKesson Advances Hanson

Richard L. Hanson has been made vice-president in charge of sales and operations at the McKesson & Robbins Providence division. He was formerly with the Boston division of McKesson & Robbins, Inc.

Antonow Heads Mutual Drug

At a meeting of the board of directors of Mutual Drug Co., Cleveland, October 18, F. T. Roosa, chairman of the board, was elected president of the organization and S. L. Antonow was made general manager.

Mr. Antonow has served as president of the Chicago Retail Druggists' Association and of the Illinois Pharmaceutical Association. He was also president and general manager of the American Druggists' Syndicate, Vadsco Sales Corp. and its other subsidiaries.

Colgate Promotions

Roy W. Peet, advertising director of Colgate-Palmolive-Peet Co., Jersey City, has been appointed executive assistant to E. H. Little, president, and James S. Adams, vice-president. Hugh McKay succeeds Mr. Peet as advertising director. Mr. McKay was former European advertising director of the company.

Cyanamid Buys in Charlotte

Seventeen acres of land in Charlotte, N. C. have been purchased by American Cyanamid & Chemical Corp. for future expansion purposes.

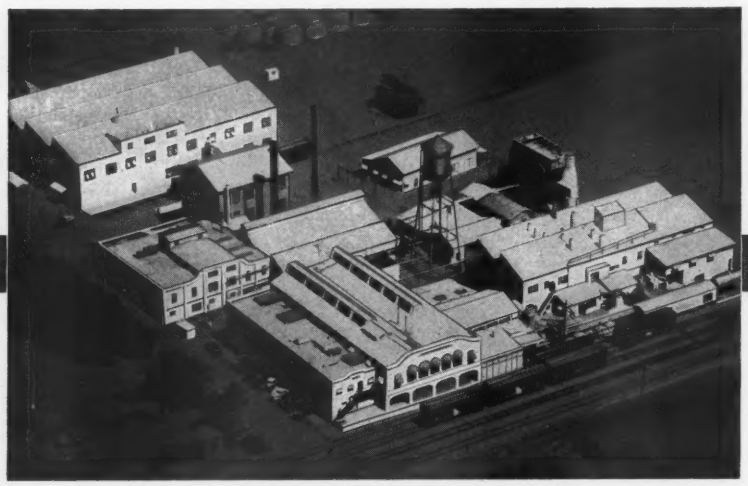
Exchange BRAND

Citric Acid

U·S·P·

CRYSTALS • GRANULAR • POWDERED

MADE IN WORLD'S LARGEST LEMON PRODUCTS PLANT
BACKED BY THE SUNKIST GROUP OF 14,000 CITRUS GROWERS



Copyright, 1940, California Fruit Growers Exchange, Products Dept.

CALIFORNIA FRUIT GROWERS EXCHANGE, PRODUCTS DEPARTMENT

189 W. MADISON ST., CHICAGO **ONTARIO, CALIFORNIA** 99 HUDSON ST., NEW YORK

IMMEDIATE DELIVERY FROM WAREHOUSE IN NEW YORK, CHICAGO, PHILADELPHIA, SAN FRANCISCO

Levy Resigns As Chairman

B. E. Levy, desirous of devoting more time to outside activities, resigned as chairman of Coty, Inc. and president of Coty International Corp., both to take effect as of January 1, 1941. He will, however, remain a director of both companies. In order to retain the benefit of Mr. Levy's vast experience gained over the thirty years since he founded the Coty business in this country, as well as his knowledge of the affairs of Coty throughout the world, the board of directors of Coty International Corp. announced the formation of a committee to be known as an advisory committee, of which Mr. Levy will be chairman. Other members of it will be H. L. Brooks, president of Coty International Corp.; L. Cotnareanu, chairman of Coty International Corp.; R. Greilsamer, managing director of Coty, S. A., France, and C. C. Valli, managing director of Coty (England) Limited.

At the same meetings of the boards, H. L. Brooks, formerly vice-chairman of Coty International Corp., was elected president, and P. Cotnareanu was elected vice-chairman of both companies.

Grove to Pay Draftees

Complete job and income security during the year of army duty under the Selective Training and Service Act has been guaranteed to all affected employees of Grove Laboratories, St. Louis.

Harry B. Goldsmith, president, announced that not only will jobs be kept open for all conscripted employees but, in addition, the company will pay to first year draftees the difference between their present salary and that received from the Government during their term of service.

J. & J. Airplane Sign

What is believed to be the first electric advertising sign in the world designed to be seen only by people traveling by air has been constructed in Chicago by Johnson & Johnson Co. The sign lies flat on the roof of the Johnson & Johnson building near the Chicago Municipal airport. It is 35 x 20 feet and consists of the Johnson & Johnson trade-mark, a red cross with a J on each side of it.

Glyco Expanding

The Philadelphia branch office of Glyco Products Co., Inc., New York, has been moved to 2000 Franklin Trust Building, 15th & Chestnut sts. The new telephone is Rittenhouse 2200. Leonard S. Levitt is Glyco's Philadelphia sales manager and technical representative.

Plans for a new building in Brooklyn have been approved by Glyco Products Co., Inc. It will consist of three sections—the administrative, research laboratory and manufacturing divisions. The administration building and research laboratory will be located at 228-236 King st. and the shipping and receiving departments will be at Pioneer st. It is expected that work on the new plant will start about December 15.

Merck B_1 Book

Merck & Co. has just issued a revised edition of "The Story of Vitamin B_1". The seventy-two page book reviews the current literature on the subject and has made extensive use of the information presented in various well-known standard compilations. It deals with the isolation and synthesis of Vitamin B_1; its properties and standards; its assay and units; physiological action; use in animal and human nutrition; and its role in plant growth.

The brochure is not intended for general distribution but will be sent to investigators in the field of vitamin therapy, to medical specialists, food chemists, research workers in human and animal nutrition, colleges and universities, government agricultural and experiment stations, manufacturers of ethical pharmaceutical and proprietary products, and to other individuals who are properly entitled to receive it for their information and use.

Mineral Oil Brochure

"Pure Because We Make It So" is the title of a brochure on White Mineral Oils, prepared by L. Sonneborn Sons, Inc., New York. Many important facts relating to the testing and standardization of U. S. P. White Mineral Oil are presented for the information and guidance of users of this commodity. A resume of White Mineral Oil labeling requirements in accordance with the latest rulings of the F. D. A., the technique of the U. S. P. Acid Test illustrated in color, the importance of White Mineral Oil stability and its achievement through refining methods developed after many years of research, are among the subjects covered.

Copies of the brochure may be obtained from L. Sonneborn Sons, Inc., 88 Lexington Ave., New York.

Fluorophotometer Book

Pfaltz & Bauer, Inc., New York, has brought out a new complete detailed publication on the application of the Fluorophotometer in both fluorometric and colorimetric substances. It describes in full the method used and gives a large bibliography of related data. Copies are available upon request.

Large Firmenich Shipment

Firmenich & Co., Inc. reports that the SS Mount Taurus, a Greek ship chartered by the Swiss government arrived in New York, October 19, carrying the largest single shipment ever received here by Firmenich & Co. This was in addition to regular shipments arriving from Lisbon on the American Export line ships.

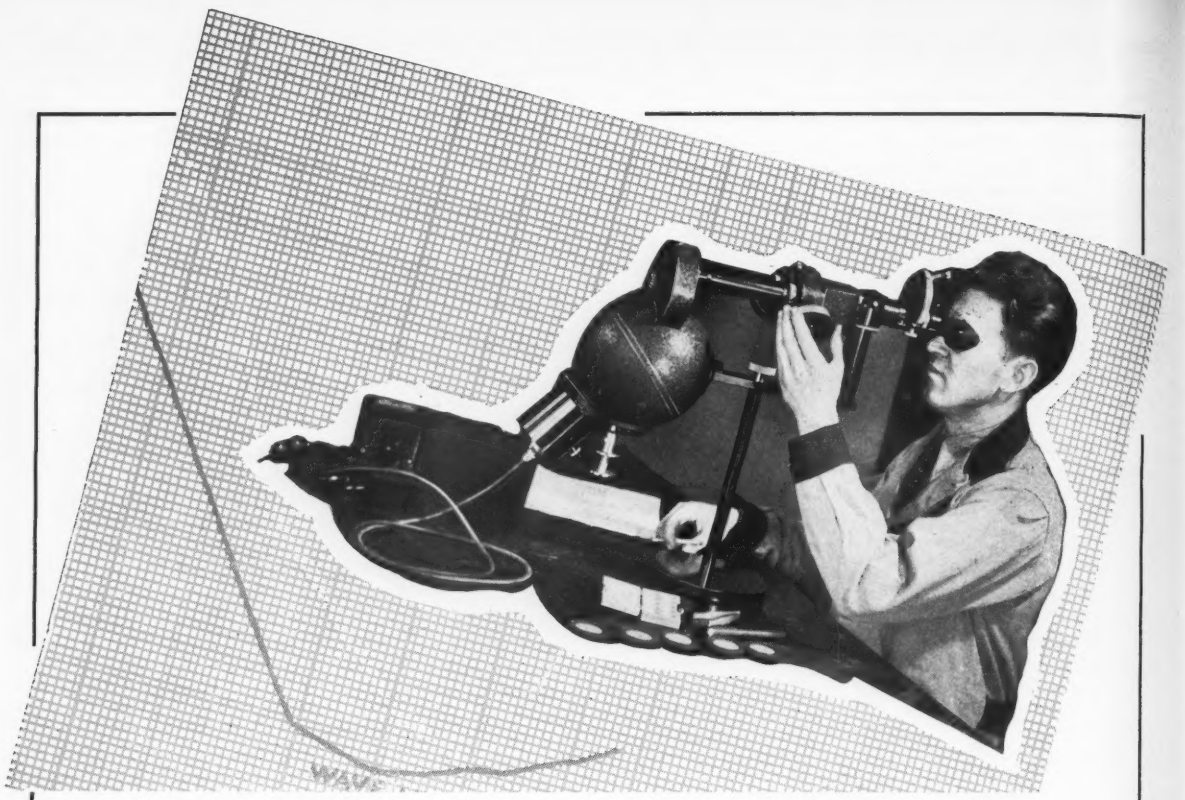
Endocrine Products Expanding

Endocrine Products Laboratories has made plans for the construction of another laboratory at 2215 Southwest Drive, Los Angeles. The new plant will include an administration building, a laboratory building and an animal house.

New Ritchie Plant

R. H. Ritchie, president, officiated at the dedication of the new $250,000 addition to the plant of W. C. Ritchie & Co., Chicago. The executive and general offices, as well as many operations involved in the manufacture of set-up paper boxes, fibre cans and transparent packages, have been transferred to the new building.

NEW RITCHIE PLANT



No Color Variation
for over three years

We have mastered the problem of color variation! For three years we have proved to Kolmar customers that our method of measuring and charting all cosmetic shades, by means of our photometer, assures reproduction without possibility of variation. Your products, too, can be accurately reproduced Write to Kolmar Laboratories for further details.

Manufacturers of private label brand cosmetics only
We protect your interests with products Liability Insurance

Kolmar laboratories

MILWAUKEE . . . NEWARK

Representatives: Mr. M. C. Boyd, Quinby Bldg. . . . . Newark, N. J.
Mr. Douglas Haggerty, 122 E. 42nd St. . . . . New York City
Mr. Warren Curry, 3980 Club Drive . . . . . Atlanta, Ga.
Mr. Norman Kole, 980 Merchandise Mart . . . . Chicago, Ill.
Mr. R. F. G. Byington, 155 N. Vermont Ave., Los Angeles, Cal.

Jamieson Buys McKay Davis

Purchase of the McKay-Davis Co., Toledo, has been announced by C. E. Jamieson & Co., Detroit. McKay-Davis Co. specializes in the manufacture of effervescent products to private formulas and uses a process said to be totally different from the ordinary standard method, using in the case of tablets a rotary machine in place of the single punch necessary under the old process. A. M. Donofrio, whose process this is, will continue in charge of the manufacturing operations.

The Toledo plant will be operated as a separate unit of the Jamieson company.

Miller Heads Strong, Cobb

George Miller has been elected president of Strong, Cobb & Co., Cleveland. Mr. Miller, who was formerly general manager, succeeds Major C. H. Strong who has headed the company for the past year. Major Strong became president upon the resignation of T. S. Strong, and remains a director of the company.

Other officers who were re-elected are: vice-president in charge of sales, Herbert H. Strate; vice-president in charge of production, George H. Gerlach; secretary, Robert D. Godfrey and treasurer, S. Sterling McMillan.

Until three years ago Mr. Miller was actively connected with Miller Wholesale Drug Co. and Miller Drug Stores when he was forced to resign because of ill health. He became general manager of Strong, Cobb & Co., last November.

McAllister—Ad. Club Official

Edward McAllister, Vick Chemical Co., has been elected president of the young men's group of the Advertising Club of New York.

Food Research Appoints Melnick

Food Research Laboratories, Inc., Long Island City, has announced the appointment of Daniel Melnick, Ph.D., to the position of chief chemist.

Dr. Melnick, a graduate and former member of the department of physiological chemistry of Yale University, has until now been the chief chemist associated with the vitamin research program at the University of Michigan. He is known for his numerous contributions on the chemistry and physiology of proteins, enzymes, and vitamins, including the development and clinical application of chemical methods for thiamine and nicotinic acid.

Jergens to Expand

Andrew Jergens Co. is planning to spend about $25,000 on an addition to its plant at Burbank, Calif.

Guerlain Wins Case

The Court of Customs and Patent Appeals has upheld the judgment of a lower court that empty perfume bottles marked with the name Guerlain should be appraised at their invoice values when imported from France. The lower court's ruling was based on a decision that the bottles were made by Pochet and Baccarat and consequently were dutiable at only the entered values.

The government contended that Guerlain, Inc., of Paris, is the manufacturer of the bottles and that, therefore, they should be appraised at their invoice value, plus 20 per cent for general expenses and 15 per cent. for profit of the Guerlain company.

Cardinal Perfumes Moves

Cardinal Parfums, Inc., New York, has leased a floor at 11 West 19 st., that city. This gives the company about 22,000 square feet of space.

Horvath Opens Office

Dr. A. A. Horvath, an authority on soybeans has resigned from Horvath Laboratories, Chambersburg, Pa., to open his own consulting office at 918 St. James st., Pittsburgh.

McDow Joins Anchor

C. B. McDow, for twenty-one years a cap and glass container sales representative, for the past eleven years as eastern district sales manager of Phoenix Metal Cap Co., has been appointed eastern home office representative of the Anchor Cap & Closure Corp.

Mr. McDow will represent the Lancaster, Ohio, home office but will have his headquarters and operate out of the Long Island City plant.

Claflin Co. Organized

The Claflin Co., a wholesale drug firm with headquarters at 40 Mathewson st., Providence, R. I., has been organized by Albert W. Claflin, former president of the George L. Claflin Co. Mr. Claflin is president; Thomas L. Denison and Patrick Faruolo, vice-presidents, and George Duggan, secretary.

Merck to Build

Merck & Co., Inc., has awarded a contract to White Construction Co. for the erection of a new brick, concrete and steel structure on Lawrence St. and East Scott Ave., Rahway. The new building will cost $97,000.

Sharp & Dohme in England

It has been reported that an explosion has severely damaged buildings occupied by Sharpe & Dohme, Ltd., City Road, London, E. C. 1.

Monsanto Changes

Thornton C. Jesdale, assistant manager of the Chicago branch office of Monsanto Chemical Co., is being transferred early in November to the Everett, Mass., office where he will be in charge of New England

THORNTON C. JESDALE

sales of the products of the organic chemicals and phosphate divisions.

A native of Chicago, Mr. Jesdale joined the Monsanto branch there in 1927 as a shipping clerk, and was promoted to the sales staff in 1929. He is a member of the Chicago Drug and Chemical Association.

Edward A. O'Neal, Jr., manager of the Anniston plant of the phosphate division of Monsanto Chemical Co., and E. J. Swanson, chief clerk at Anniston, have been transferred to Monsanto's new Trenton, Mich., plant.

Mr. O'Neal will go to Trenton to become plant manager shortly after January 1, and Mr. Swanson took over the accounting work at the field office about November 1. He will be office manager at the plant when it is in operation.

Mr. O'Neal was born in Florence, Ala. was graduated from Davidson College' Davidson, N. C., in 1926. In July, 1926' he went to work in the research depart-' ment of the Swann Corp,. later absorbed by Monsanto, and in 1928 he was transferred to the abrasive operating department as assistant superintendent. In 1930, he was made superintendent of the abrasives department, in 1932, assistant superintendent of the furnace department including abrasives and in 1934, superintendent of the furnace department. He was appointed assistant to R. R. Cole division general manager in 1937 and soon after that was made manager of the Anniston plant.

Mr. Swanson has been at the Anniston plant since 1936 and, until his transfer, was chief clerk in the plant office. Mr. Swanson has had many years of experience, having started his business career in 1915.

Weed Leaves Harvey

E. W. Weed has resigned as president of the G. F. Harvey Co., Saratoga Springs, N. Y.

THE POPULARITY OF *Eaux de Cologne* IS STILL IN THE ASCENDENCY

and is destined to rise to new highs next Spring. Are you preparing to profit by this popularity? NOW is the time to plan for your new floral or bouquet colognes for the coming Spring season.

In the following numbers the floral or bouquet note is so skilfully blended with the light, fresh fragrance of the citrus cologne that smooth, artistic creations result. A handsome margin of profit is assured through their adoption.

APPLE BLOSSOM
Delightful light floral note. Suitable also as a novelty.

BOUQUET CAPRICE
Light oriental bouquet effect.

BOUQUET NOUVEAU
A heavier, spicy oriental note.

CARNATION
Red Carnation type. Very flowery.

CITROSOL
For those who still prefer an outstanding product of the original citrus type.

JASMIN
Refreshing odor of this popular type.

LILY OF THE VALLEY
Irresistible, dainty, refreshing woodland lily bell type.

ORANGE BLOSSOM
Delightful bouquet founded on this popular flower.

SWEET FERN
Subtle fougere type. Very masculine.

VIOLET
This type is rapidly regaining its old-time popularity. Also of the masculine type.

Many other bouquets are now available

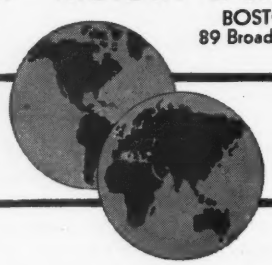
To meet the varying needs of manufacturers, these odors are made in two grades. **E C #6 at $6.00 per pound . . and . . E C #12 at $12.00 per pound.** Special prices on quantities and contracts. When requesting samples, please specify particular grade desired; manufacturing suggestions also available. Write:

ORBIS
PRODUCTS CORPORATION

215 PEARL STREET, NEW YORK - FACTORY & LABORATORY, NEWARK, N.J.

CHICAGO 831 N. Wabash Ave.
PHILADELPHIA 610 Brown Bldg.
BOSTON 89 Broad Street
CINCINNATI 505 W. McMillan St.
MEMPHIS, TENN. 1620 Carr Ave.

Water Soluble Gums	Waxes	Cosmetic Raw Material	Fruit Flavors
Thymol	Stearic Acid	Oleo Resins	Food Colors
Aromatics	Essential Oils	Perfume Bases	Quince Seed
Rice Starch	Zinc Oxide French	Olive Oil	Irish Moss



People

Makowsky Moves to N. Y.

Jacques Makowsky, responsible for the designs of the packages of some of the world's most famous perfumes, is transferring his activities from Paris to New York. Mr. Makowsky in partnership with E. Donati will maintain offices at 438 West 37th St., as the J. Makowsky Corp.

JACQUES MAKOWSKY

Mr. Makowsky's work has not been confined to the perfume field. and he is well known for the artistry of his printing on metal foil. The complete exhibit of his work that was on display at the French Pavilion of the New York World's Fair has been requested by the Metropolitan Museum of Art.

Many American orders previously placed with the Paris establishment will now be produced by the Makowsky plant in New York.

Dinner to B. M. Todd

A testimonial dinner was given for B. M. Todd, superintendent of the Newark warehouse of Consolidated Products Co., at the Newark Athletic Club, October 10. The occasion was Mr. Todd's retirement after twenty-one years of service with Consolidated Products Co. He now becomes the first of the company's employees to receive a pension.

A. M. Kahn, president of the company made the principal address and C. J. Gale acted as toastmaster. Mr. Todd turned over the keys of his office to William Wolf, his successor. Mr. Wolf, who recently returned to the Consolidated organization, started his business career twenty years ago as secretary to Mr. Todd at the first Newark warehouse.

Warzala on Safety Council

At the twenty-ninth annual National Safety Congress held recently at the Stevens Hotel, Chicago, Stanley Warzala, supervisor of safety for Calco chemical division of the American Cyanamid Co., was elected a member of the board of directors of the National Safety Council. Mr. Warzala was also elected chairman of the chemical section of the council.

Jean Lageat Visits Here

Jean Lageat, director of Etablissements Antoine Chiris, Grasse, France, has arrived in this country for a few months' visit with the American company, Antoine Chiris Co., New York.

Mrs. Sugden Visits Here

Mrs. J. Sugden, representing Allen & Hanburys (Africa) Ltd., is in this country for a few months' visit, surveying the perfume and cosmetic business here.

Associations

Brooks Named Convention Chairman

Herman L. Brooks, president of Coty, Inc., New York, and president of the Toilet Goods' Assn., has been named general chairman for the fourth annual convention of the National Association of Chain Drug Stores, which will be held May 22, 23 and 24, 1941, at White Sulphur Springs. Mr. Brooks will designate various committee members to help him with plans for the convention.

New Officers

The annual perfumery and gift show of the Pittsburgh Toilet Goods Assn. was held in the William Penn Hotel, Pittsburgh, September 30 to October 5. At the close of the show the following officers were elected for the coming year: president, Walter E. Welles, (Yardley); vice-president, Carl S. Caspar, (Lentheric); treasurer, Harry G. Payne, (Harriet Hubbard Ayer); secretary, Robert W. B. Roe, (Ramel Mfg. Co.), Board of directors: chairman, Elton B. Andrews, (Tre-Jur); Harry Garrett, (DeVilbiss); M. B. Simpson, (Ferd Mulhens); E. C. Bullock, (Maurice Levy); Paul Reuter, (Seaforth).

A. N. A. Officials

H. W. Roden of Harold H. Clapp, Inc., was elected chairman of the board of directors of the Association of National Advertisers at its annual meeting at White Sulphur Springs in October. New directors elected are Leo Nejelski, Pepsodent Co., and D. P. Smelser, Procter and Gamble Co., both former vice-chairmen.

Merck Wins Ad Award

The Board of judges of the Direct Mail Advertising Association has selected Merck & Co. Inc., Rahway, N. J., as one of the 50 direct mail leaders of 1940, according to an announcement made by Douglas Wakefield Coutlee, director of advertising for the company. The award was made on the basis of outstanding direct mail literature employed in the professional promotion of several Merck medical products. The Merck Report, a magazine for physicians and pharmacists, and edited by Mr. Coutlee, was also included in the winning presentation. This is the third successive year that Merck & Co. Inc. has received the direct mail advertising award.

Phila. Drug Outing

The Philadelphia Drug Exchange held its fall outing at the Cedarbrook Country Club, October 16. W. R. Cleary and H. S. Sarkison were tied for low gross score. The entertainment program was arranged by a committee headed by R. G. Anderson of Merck & Co., and composed of

Richard A. Staines, display manager of Vandever's, Tulsa, Oklahoma, created this sensational window of Elmo Cosmetics in Indian Love Call colors, using authentic Indian costumes and relics, natural moss and tree trunks.

F. F. Law, E. L. Brendlinger, B. A. Ludgate, H. B. Price, H. Z. Krupp, E. F. Schaffer and J. M. Rosenberger.

The golf tournament was followed by dinner.

Salesmen's Christmas Party

December 19 has been selected for the annual Christmas party of the Salesmen's Association of the American Chemical Industry. It will be held again at the Hotel Edison, New York.

Weisberg Heads Consulting Chemists

The annual meeting of the Association of Consulting Chemists and Chemical Engineers, Inc. was held October 22 at the Chemists' Club, New York. Election of the following officers was announced: president, Louis Weisberg; vice-president, John P. Hubbell; secretary, H. P. Trevithick; treasurer, Jerome Alexander. New directors elected for three years were C. A. Crowley, Bernard L. Oser, Arthur W. Thomas. Directors whose terms have not yet expired are Alvin C. Purdy, the former president, Charles V. Bacon, Prentiss T. Bee, Philip P. Gray, Stephen Laufer, Frank A. Strauss and Thomas A. Wright.

Higdon on Advertising

H. J. Higdon, advertising manager of the Phoenix Metal Cap Co. and editor of the "Phoenix Flame," addressed the Advertising Club of Indianapolis on the subject "The Object of All Advertising is to Sell—Don't You Believe It." Hig's theme is that advertising must give something—instruct, inform, entertain, serve—and that most advertising today is too selfish. His summary of the good things that a house publication can accomplish and of the things that an editor of such a publication should avoid are the valuable contributions of an expert in his field.

Packaging Institute Meets

The three divisions of the Packaging Institute—machinery, supplies and production—voted to continue the existence of the organization at its annual meeting which was held at the Westchester Country Club in October.

Carl H. Lambelet, president of New Jersey Machine Co., Hoboken, was elected president of the institute for the coming year. Other officers elected were: first vice-president, George R. Webber, production manager of Standard Brands, Hoboken; second vice-president, A. V. Shannon, sales manager of the Westfield River Paper Co., Russell, Mass.

At the organization meeting of the supplies division six directors to serve on the board of Packaging Institute were chosen: E. A. Throckmorton, Container Corp. of America, Chicago; P. I. Heuisler, Maryland Glass Corp., Baltimore; Stanley L. King, Monsanto Chemical Co., Springfield, Mass.; James Harley Nash, New York; P. M. Gilfillan, Shellmar Products Co., Mt. Vernon, Ohio; A. V. Shannon, Westfield River Paper Co., Russell, Mass.

Two new directors were elected by the production division—K. T. Krantz, Colgate-Palmolive-Peet Co., Jersey City, and Howard A. Sumner, Norwich Pharmacal Co., Norwich, N. Y.

The machinery group elected three directors: H. H. Leonard, president, Consolidated Packaging Machinery Corp., Buffalo; Bryant W. Langston, vice-president, Samuel S. Langston & Co., Camden, N. J.; Lee W. Duer, president, Elgin Manufacturing Co., Elgin, Ill.

BIMS Beefsteak

The BIMS of Boston are making plans for a beefsteak dinner which will be held some time early in January.

D.C.A.T. Fall Meeting

The fifth annual Fall Meeting and Outing of the Drug, Chemical, and Allied Trades Section of the New York Board of Trade was held October 17 to 19 at Skytop Lodge, Skytop, Pa. with an attendance of over two hundred men and ladies.

The meeting opened on the evening of October 17 with a cocktail party and buffet supper. On Friday morning, October 18, the qualifying round of the golf tournament was held, and in the afternoon the business meeting was held under the direction of Ralph E. Dorland, of The Dow Chemical Co., chairman of the section.

The speakers for the meeting were arranged by Hugh Craig, editor of the "Oil, Paint, and Drug Reporter," who introduced the speakers and led the discussion. The first address was given by Major Clifford V. Morgan, of the Medical Corps, Chemical Section, Commodities Division, Army and Navy Minitio ns Board, who spoke on "Drug and Chemical Aspects of National Defense Organization and Functions. "United States Trade and Asiatic Policy" was the title of the address given by Robert Aura Smith, "New York Times" correspondent, author, lecturer, and world traveller. "The United States Looks Southward" was the title of the address given by Dr. Simon G. Hanson, Chief Economist, Committee to Coordinate Commercial and Cultural Relations between the American Republics.

On Friday evening an entertainment by professional talent was given following dinner. The golf tournament was held on Saturday morning, and a ladies putting contest was held Saturday afternoon.

Winners in the golf tournament were: Low Gross A. P. Connor, Philadelphia; Low net Ralph Patch, The E. L. Patch Co.; First Flight Low Gross Charles Mott, Topics Publishing Co.; Low Net, J. R. Dilworth, Anchor-Hocking Glass Corp.; Second Low Net, Ira Vandewater, R. W. Greef & Co.; Second Flight Low Gross, D. J. Bradley, Thomas Leeming & Co.; Low Net, J. J. Clark, The Liggett Drug Co.; Second Low Net, Charles H. Berle, Innis, Speiden & Co.; Third Flight Low Gross, H. B. Sliger, Commercial Solvents Corp.; Low Net, H. H. Gritzan Jr., Maryland Glass Corp.; Second Low Net, A. J. Higgins, Zinsser & Co.; Fourth Flight Low Gross, Mrs. Charles Mott; Low Net, Mrs. Ira Vandewater, Second Low Net, Mrs. Joseph A. Huisking.

Longest drive was won by Bruce Puffer, Kimble Glass Co.; Nearest the Pin was won by Clarence Warner, of Maltbie Chemical Co.; Kickers Handicap First, T. S. Cosgrove, Platt-Forbes, Inc.; Second, R. J. Perry, Zinsser & Co.; Third, R. A. Clark, The J. T. Baker Chemical Co.; Fourth, J. J. Reiner, Lehn & Fink Products Co.; Fifth Karl Voss, Karl Voss Corporation.

Ladies' Kickers Handicap was won by Mrs. L. I. Volckening. Ladies' Selected Nine Holes was won by Mrs. A. L. Mullaly, Ladies' Putting Contest, First, Mrs. J. F. Kelly; Second, Mrs. R. Aeberle; Third, Mrs. E. Rathje; Fourth, Mrs. Edward S. Burke.

Colombian Pharmacopoeia

A bill has been introduced in the Chamber of Representatives in Colombia for the creation of a commission to compile a Colombian pharmacopoeia. The commission would be given four years to compile the pharmacopoeia and the practice of pharmacy would be restricted to Colombians certified by the National University School of Pharmacy and to foreign pharmacists whose credentials were recognized by the National University.

Abbott Hall Dedicated

Abbott Hall on the Chicago Campus of Northwestern University was formally dedicated on Sunday, October 20. This modern residential skyscraper was made possible by a gift of more than $1,500,000 from the estate of Clara A. Abbott, wife of Dr. Wallace C. Abbott, founder of Abbott Laboratories. Dr. Franklyn B. Snyder, president of Northwestern University, was chairman of ceremonies. Alfred W. Bays, president of the Abbott Foundation, spoke on behalf of the Abbott Trust, while Harry L. Wells, vice-president and business manager of the university, spoke for his institution. A portrait of Dr. Abbott was unveiled by two of his grandchildren, Louise and Wallace Ford.

The twenty-story building, located on Lake Shore Drive at Superior st. is nuch more like a residential club than a college dormitory.

The name Baker known wherever Fine Chemicals are used

A partial list of Tonnage Fine Chemicals held under rigid control, at no price premium.

- Alkali Bromides
- Potassium Iodide
- Magnesium Oxide
- Magnesium Carbonate
- Cream of Tartar
- Bismuth Subcarbonate—Subnitrate and other Salts
- Caustic Potash and Soda Sticks and Pellets
- Rochelle Salt
- Lead Acetate
- Salicylates

DEEP-ROOTED QUALITY

Like the sturdy roots of a giant oak, Baker Quality goes deep.

The Baker Chemical Co. was founded — and achieved its first success — on *quality.* That was 35 years ago when Baker pioneered Analyzed C. P. Chemicals—boldly printing on the label the actual analysis (purity analyzed to the decimal). Baker was the first company and still is the *only* company in this country to take this quality step.

Baker's achievement of quality in Fine Chemicals, *purity by the ton,* has been equally interesting. Because of their unusually high standards of purity, their uniform quality, Baker's Fine Chemicals are *sought* by hundreds of pharmaceutical manufacturers.

You, too, may have a manufacturing problem where a quality Fine Chemical can enable you to offer more selling advantages. It may be a refinement of a U. S. P. Chemical. It may be a special chemical made especially for you to rigid specifications. Whatever it is — let Baker discuss your problem with you. Baker has had the privilege of helping many pharmaceutical manufacturers achieve their goal.

Look at the list of tonnage Fine Chemicals on this page. These are only a few of the many Baker Fine Chemicals that have won us a host of friends from large pharmaceutical and drug houses.

Wherever Fine Chemicals are used, the name, Baker, is known. So be sure to get samples of Baker's, and compare. It is on this basis alone that we ask you for your business. Your inquiries and interest are invited.

Baker's

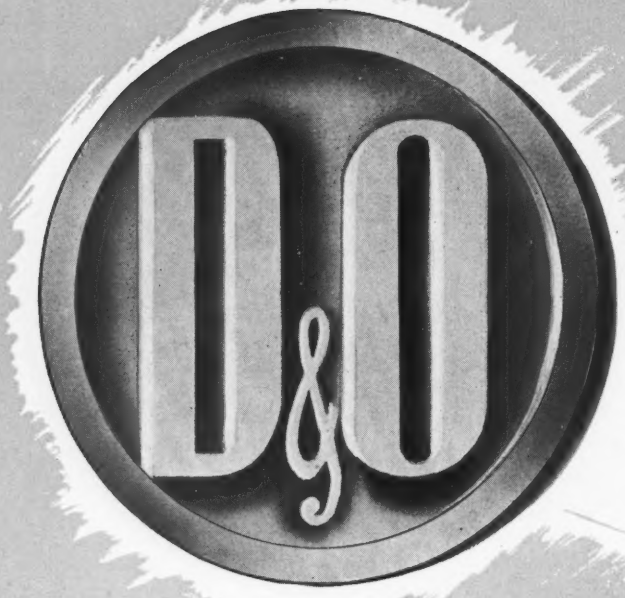
J. T. BAKER CHEMICAL CO., Phillipsburg, New Jersey

NEW YORK
420 Lexington Avenue

PHILADELPHIA
220 South 16th Street

CHICAGO
435 North Michigan Avenue

Baker's fine chemicals



Drastic supply adjustments of twenty-five years ago are again vivid in the minds of those who faced the problem of finding new ways of getting essential products, or new materials to replace them. Such conditions effect a heavy premium on strong connections in primary markets.

Now, as then, D & O's world wide acquaintance and standing with producers, traders and shippers, are proving valuable by their aid to American manufacturers in procuring difficultly obtainable materials.

While we cannot claim the impossible and can make no assertion of interference with supplies, we can point with some pride to the fact that our customers have thus far suffered little and that we can supply many hard to get items, so necessary to the perfumer, such as

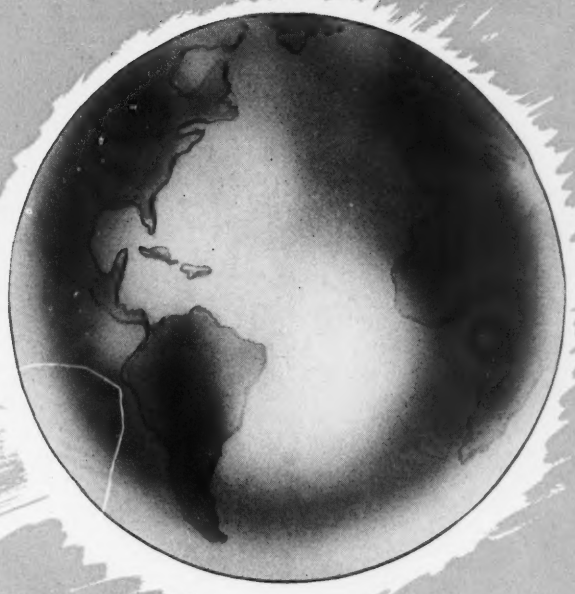
OIL BERGAMOT
OIL LAVENDER
OIL PATCHOULY
AMBERGRIS
CIVET
MUSK
OIL AMYRIS
OIL GUAIACWOOD
OIL VETIVERT
OIL ROSE
OIL NEROLY
OIL GERANIUM
(Bourbon and Algerian)

D&O
ESTABLISHED IN 1798

D O D G E &

180 VARICK STREET

Branches: BOSTON · CHICAGO · PHILADELPHIA · ST. LOUIS · LOS ANGELES



In far countries, and in many languages, D & O has meant the American market for producers and shippers. Now, in the confusion of a world trade seeking new adjustments, the resources of D & O can be turned to advantage to the American buyer.

If you desire the creation of a special odor for some new product or line of products, or if your problem is the adjustment of present formulae to provide greater security against possible material shortages, our perfume specialists should be able to help you and their services are at your disposal. Their past successes, many of them notable, have made them eager for fresh laurels.

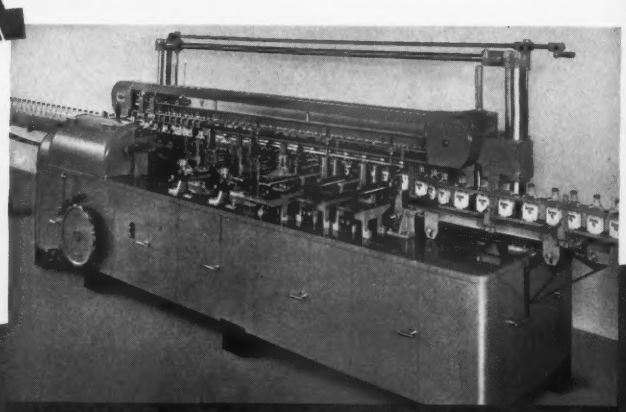
OLCOTT COMPANY

NEW YORK, N. Y.

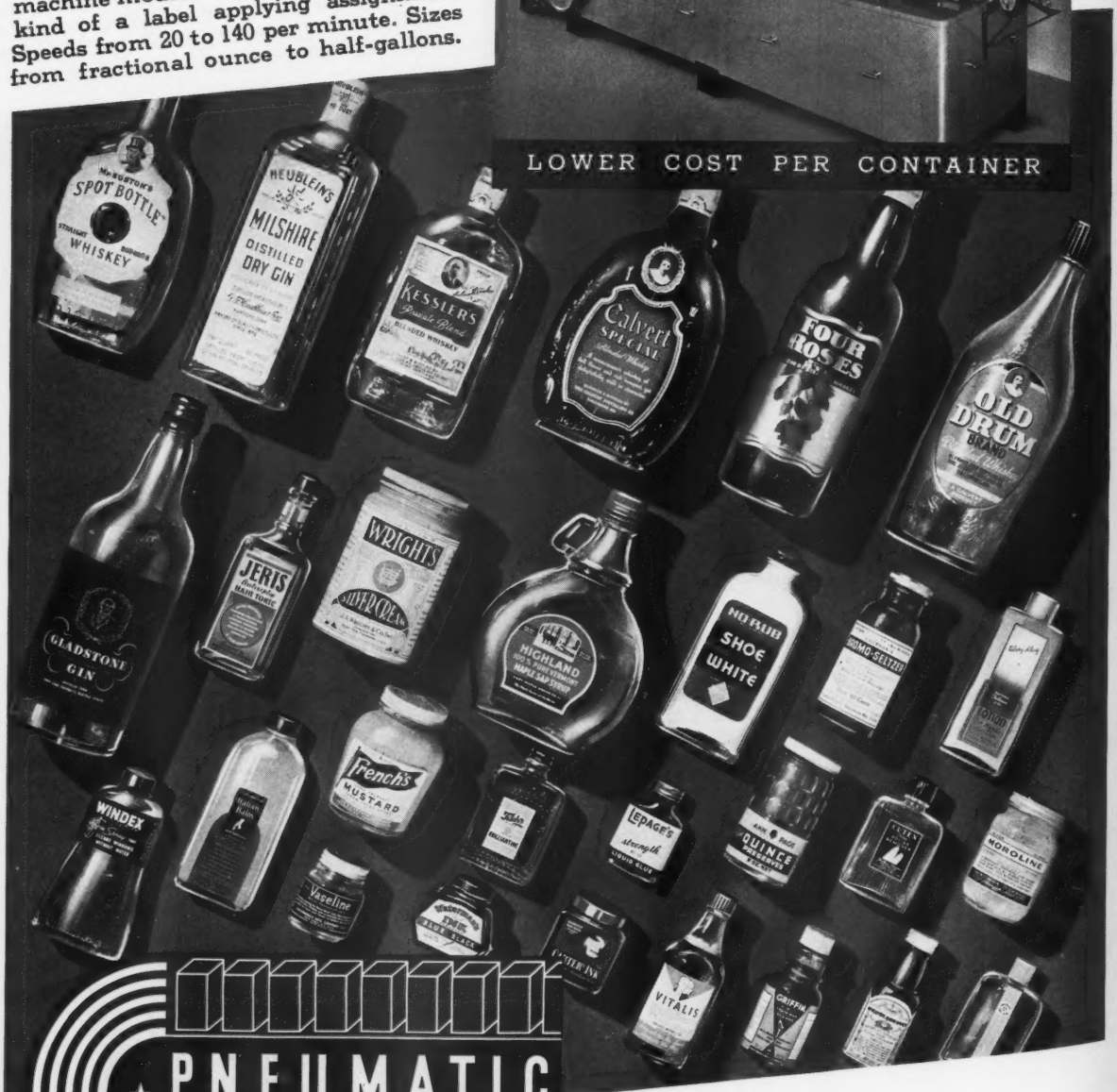
Plant and Laboratories: BAYONNE, NEW JERSEY

WHO DOES AMERICA'S LABELING?

For low cost, mass production labeling of food, drug, cosmetic, wine, liquor and specialty containers, the leaders depend on Pneumatic built automatic labelers. Pneumatic's complete line of labeling machine models will handle nearly every kind of a label applying assignment. Speeds from 20 to 140 per minute. Sizes from fractional ounce to half-gallons.



LOWER COST PER CONTAINER



★ PNEUMATIC

PACKAGING & BOTTLING EQUIPMENT

PNEUMATIC SCALE CORPORATION, LTD.

70 Newport Ave., Quincy, Mass. (Norfolk Downs Station)

Branch Offices:

NEW YORK • CHICAGO • SAN FRANCISCO • LOS ANGELES

Financial

McKesson Accepts Stock

The New York Federal District Court has authorized William J. Wardall, Trustee of McKesson & Robbins, Inc., to accept offers from eighteen directors of the drug concern to surrender certain shares of stock in settlement of claims against them.

The offers of the directors provide for the surrender of 8,650 shares of preference stock and 900 shares of common stock of McKesson & Robbins, Inc. and 75 shares of common stock of McKesson & Robbins, Ltd., the Canadian subsidiary, having a total value of approximately $490,000 on the basis of assigning $56.00 per share to the preference stock because of its legal priority. The offers are conditional upon an agreement not to sue them on any claims arising out of their acts as directors of the company.

Directors of the company making the offers are: J. L. Bedsole, Warren N. Churchill, W. L. Cummings, J. W. Cutler, George V. Doerr, T. O. Duff, H. D. Faxon, W. W. Gibson, B. B. Gilmer, Leo. A. Lanigan, Horace B. Merwin, Charles F. Michaels, William J. Murray, Jr., Richard G. Pettingill, Estate of Walter F. Terry, A. H. Van Gorder, McKay Van Vleet, Sidney J. Weinberg.

Monsanto Pension Plan

Edgar M. Queeny, president of Monsanto Chemical Co., has announced that at a special meeting December 20 stockholders will be asked to vote on a proposed pension plan covering employes and officers of the company and its domestic subsidiaries. The plan has already been approved by the Monsanto board of directors.

Weinberger to Offer Stock

Weinberger Drug Stores, Inc., has filed plans with the Securities and Exchange Commission for offering 10,000 shares of its common stock through T. H. Jones & Co., Cleveland. The company points out that it needs additional working capital in connection with its program for opening additional store units and expanding facilities at some of its present stores.

The Weinberger chain recently opened its forty-first, forty-second and forty-third units in Massillon, Youngstown and Bucyrus, Ohio. The forty-fourth store will be opened shortly at Garfield Heights Boulevard in suburban Cleveland.

Abbott Earns More

Abbott Laboratories and subsidiaries report for the nine months to September 30 a net profit of $1,987,042, equal to $2.57 each on 755,204 shares of common stock. This compares with a profit of $1,756,578, or $2.51 each on 672,095 shares in the same period last year. For the September quarter the net profit was $856,924, or $1.11 a share, against $384,628, or 49 cents a share in the preceding quarter and $744,571, or $1.07 a share, in the third quarter of 1939.

Amer. Cyanamid Earns More

American Cyanamid Co. and subsidiaries report for the nine months to September 30 a net income of $4,227,858. This is equivalent to $1.61 a share on 2,618,364 common shares and compares with a net income of $3,261,358, or $1.25 a share on 2,618,369 shares in the same period of 1939.

Amer. Home Earnings Steady

American Home Products Corp. and subsidiaries report for the nine months to September 30 a net profit of $3,106,831, or $3.85 a share on 806,697 shares against net profit of $3,084,491, or $3.83 a share on 804,390 shares in the same nine months last year.

Anchor-Hocking Reports

Anchor Hocking Glass Corp. and subsidiaries report for the twelve months to September 30 a net profit of $1,298,737, equal to $1.50 each on 715,550 shares of common stock. This figure includes the earnings of a Canadian subsidiary at the official rate of exchange, but without provision to reduce the Canadian assets to United States dollar equivalent. For the twelve months to September 30, 1939, the net profit was $1,319,083, or $1.47 a share.

Bristol-Myers Net Up

Bristol-Myers Company and subsidiaries report for the September quarter: Net profit, $831,296, equal to $1.22 each on 681,973 shares of $5 par capital stock, against $369,810 or 54 cents each on 681,973 shares in preceding quarter and $625,159 or 92 cents each on 681,831 shares in third quarter of 1939. Nine months: Net profit, $1,974,137 or $2.89 a share, against $1,943,859 or $2.85 a share last year. Twelve months: Net profit, $2,410,062 or $3.53 a share, against $2,357,184 or $3.46 a share for the twelve months to Sept. 30, 1939.

Carbide Net Up Sharply

Union Carbide and Carbon Corp. reports for the quarter ended September 30 a net profit of $11,004,553. This is equal to $1.19 a share on 9,277,788 shares and compares with $9,503,469 or $1.02 a share for the quarter ended on June 30, and $8,400,326, or 92 cents a share on 9,090,288 shares for the corresponding quarter last year.

Commercial Solvents Net Up

Commercial Solvents Corp. has announced a net profit of $1,608,988 for the first nine months of 1940. This amounts to 61 cents each on 2,638,878 shares of stock and compares with $911,620, or 35 cents a share for the first nine months of 1939.

For the third quarter the net profit was $562,437, or 21 cents a share, against $532,991, or 20 cents a share for the second quarter of 1940 and $473,520, or 18 cents a share for the third quarter last year.

Crown Cork Calls Bonds

Crown Cork & Seal Co. called for payment November 1 at the Chase National Bank, New York, $121,000 of its 4 per cent. sinking fund bonds due in 1950.

Dodge Cork Net Higher

Dodge Cork Co. reports for the nine months to September 30 a net profit of $38,263, against $23,542 for the same period last year. The profit for the third quarter was $14,987.

Dow Earnings Up Sharply

Dow Chemical Co. and subsidiaries report for the quarter ended August 31 a net profit of $2,105,946, equivalent to $1.96 each on 1,031,988 shares of common stock and compares with $1,449,524, or $1.33 a share in the corresponding quarter last year.

The company has announced that the 103,199 shares of common stock without par value offered to the holders of common stock in the ratio of one share for each ten shares held, at the price of $100 per share, was fully subscribed and paid for with the exception of a few scattering odd lot shares. The subscription rights expired October 11.

Gallaher Drug Net Up

Gallaher Drug Co. reports for the year ended June 30 a net income of $141,735, equal to $14.23 each on 7,500 common shares. In the previous year the net income was $133,183, or $12.93 a common share. Sales for the year ended June 30, 1940, were $4,477,602 against $4,142,580 for the previous year.

Hazel-Atlas Earns Less

Hazel-Atlas Glass Co. reports for the September quarter a net income of $721,167, equal to $1.66 each on 434,409 capital shares, and comparing with $1,066,212, or $2.45 a share in the same quarter of 1939, and $803,429, or $1.85 a share in the quarter ended June 30, 1940.

Lambert Net Off

Lambert Co. reports for the September quarter a net profit of $342,705, equal to 46 cents each on 746,371 shares of capital

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stock, after provision for newly imposed additional Federal income tax retroactive to Jan. 1, 1940. This compares with a profit of $421,267, or 57 cents a share in the same quarter of 1939. For the nine months to September the net profit was $882,378, or $1.18 a share, against $1,073,925, or $1.44 a share last year.

Lehn & Fink Earns Less

Lehn & Fink Products Corp. reports for the September quarter: Net profit, $110,502, or 27 cents each, on 400,000 shares of $5 par capital stock, against $126,726, or 31 cents a share, for quarter to Sept. 30, 1939.

McKesson Earnings Rise

McKesson & Robbins, Inc. and consolidated subsidiaries report for the nine months ended September 30 a net profit of $2,716,744, compared with a net profit of $2,306,409 in the corresponding period of 1939.

It was pointed out that the new Federal Income Tax Law, which was made retroactive to January 1, required the company to make additional provision for Federal income taxes. In the first nine months of this year Federal taxes were $253,000 more than in the corresponding period of 1939 due to higher profits and increased rates.

Monsanto Earns More

Monsanto Chemical Co. and its American subsidiaries report for the first nine months of 1940 a net profit of $3,576,757, equal to $2.58 a share on 1,241,694 shares of common stock. This figure is exclusive of a dividend of $270,375 received from a British subsidiary. Earnings for the first nine months of 1939 were $3,253,284, or $2.31 a share.

For the quarter ended September 30 the net profit was $469,031, equal to 28 cents a share, against $1,192,219, or 85 cents a share, in the same quarter last year. The decreased earnings for this quarter reflect the increased normal and excess profits taxes under the Second Revenue Act of 1940, the report states.

Norwich Earnings Steady

Norwich Pharmacal Co. and subsidiary report for the September quarter a net profit of $159,555, equal to 20 cents a share on 800,000 shares of $2.50 par capital stock, against $164,472, or 21 cents a share in the same quarter of 1939. For the nine months ended September 30 the net profit was $530,500, or 66 cents a share, against $554,823, or 69 cents a share, last year.

Owens Net Up

Owens-Illinois Glass Co. and subsidiaries report for the twelve months ended September 30 a net profit of $8,048,406, equal to $3.02 a share on the common stock and comparing with $7,465,253, or $2.81 a share during the previous year.

Sharp & Dohme Earns More

Sharp & Dohme, Inc. report for the quarter ended September 30 a net profit of $401,939, equal to 26 cents a share on 776,627 shares of non-par common stock. This compares with a net profit of $176,330, or 77 cents a share on 229,085 shares of $3.50 preference stock, in the preceding quarter and $314,697, or 15 cents a common share in the September quarter last year. For the twelve months to September 30 the net profit was $1,099,101, or 38 cents a share on the common, compared with $865,833, or 8 cents a common share for the year ended September 1939.

Squibb Earns More

E. R. Squibb & Sons and its domestic and Canadian subsidiaries report for the six months to June 30 a consolidated net profit of $700,665, an increase of $114,929 over the same period last year. For the twelve months to June 30 earnings were equal to $3.92 a common share against $3.03 a share in the preceding twelve months.

U. S. I. Net Off

U. S. Industrial Alcohol Co. and subsidiaries report for the six months to September 30 a net profit of $390,651 equal to 99 cents a share on 391,238 capital shares. This compares with a net profit of $414,917, or $1.06 a share before adjustment of marketable securities for the full year 1939. The company states that it will not be required to pay any Federal taxes for the period. The fiscal year of the company was changed early this year from calendar-year basis to twelve months ended with March. An interim report issued for the three months ended March 31 showed a net profit of $222,429, or 57 cents a share. Gross profit of the company for the six months ended September 30 were $1,497,675, compared with $2,839,740 for the full year of 1939 and $806,660 for the three months ended March 31.

Vadsco Earnings Steady

Vadsco Sales Corp. and subsidiaries, excluding Malor Realty Corp., report for the nine months to September 30 a net profit of $81,329, against $81,271 in the first nine months of 1939.

Zonite Earns More

Zonite Products Corp. and subsidiaries report for the September quarter a net profit of $29,315, including $5,000 recovery of portion of reserve for future advertising, equal to 3 cents each on 825,656 shares. This compares with a net profit of $22,976, including $46,500 recovery from advertising reserve and $26,524 of extraordinary income, equal to 3 cents a share, in the June quarter, and a net profit in 1939 September quarter of $7,771 including $5,000 recovery from advertising reserve, equal to 1 cent a share.

For the nine months to September 30 the net profit, including extraordinary income of $26,524, was $122,828, equal to 15 cents a share. For the first nine months of 1939 there was a net loss of $24,135.

Obituaries

John Anderson

John Anderson, active in the affairs of Charles Pfizer & Co. for sixty-seven years, died at his home in Brooklyn, October 4. He was eighty-three years old.

Starting as an office boy with the Pfizer company at the age of sixteen, Mr. Anderson's rise was rapid. He was soon made a salesman and in 1882 he was sent to Chicago to take charge of the company's branch in that city. After ten years in Chicago, he returned to New York where he became manager. In 1900 the company was incorporated and Mr. Anderson became secretary-treasurer and was elected a director. In January 1914 he was made chairman of the board.

When he had served fifty years with the company his associates gave a dinner for him at the Union Club, New York. In 1929 he became chairman of the executive committee of the company and in 1935 he relinquished his personal direction of the company, continuing as executive committee chairman until his death.

Mr. Anderson's only son, George A. Anderson, who celebrated twenty-five years of service with the Pfizer organization in 1936, is vice-president of the company.

George Good

George Good, formerly a member of the sales department of the Dow Chemical Co., Midland, Mich., died at his home in Temperance, Mich., September 27. He was fifty-nine years old.

Burnside MacCallum

Burnside MacCallum, a familiar figure at wholesale drug conventions, died in Rochester, N. Y., October 12. He was sixty-seven years old.

Mr. MacCallum was formerly president of the Seneca Camera Co. and was for several years a special sales representative with Eastman Kodak Co. In 1900 he became associated with the Seneca Camera Co., later becoming manager and finally president. When the Seneca company was absorbed by the Eastman company, Mr. MacCallum was made a special representative in the wholesale drug field.

Lester McNerney

Lester McNerney, president of McMerney Chemical Corp., Los Angeles, died early in November.

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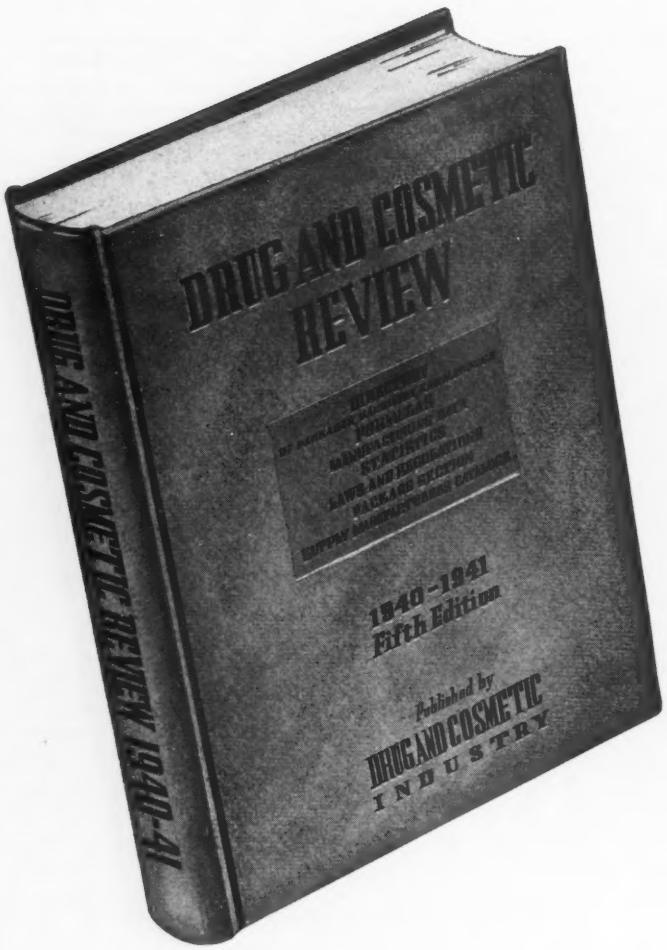

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INDUSTRY'S BOOKS

Any book reviewed in this section can be purchased direct from THE DRUG AND COSMETIC INDUSTRY at regular publisher's price.

New World of Chemistry, by Bernard Jaffe, 692 pp., Illus., Silver Burdett Co., New York, Cloth, $1.84.

This book has an unusual interest arousing approach to the subject matter of chemistry. Throughout the book, interest in content materials is aroused by means of meaningful and significant materials drawn from the historical development of a particular topic. In this way, each student so integrates content materials with historical materials that he not only learns the required content materials but also gains a thorough understanding of the way in which the fundamental ideas underlying both chemistry and all science were developed and expanded. In addition, he gains an appreciation of the part played by science in the development of modern civilization and, at the same time, learns the way in which the needs of society have constantly stimulated scientific research. Basic to the entire book are two laws and two theories: (1) the law of the conservation of matter, (2) the law of the conservation of energy, (3) the electron theory of matter; (4) the theory of ionization. Explanations of chemical phenomena are all tied to and based upon these four fundamental laws and theories. Chemical principles are developed so that students see them as: (1) descriptive and explanatory generalizations based solely upon what man has discovered; (2) products of the mind of man struggling through centuries to understand the physical world.

The Theory and Practice of Anaesthesia, by M. D. Nosworthy, 223 pp., Illus., Chemical Publishing Co., Inc., New York, Cloth, $4.25.

This book is so arranged that the reader may first master the basic principles of anaesthesia with the older methods before he passes on to the more modern techniques. The actual administration of each agent is set out in detail and the methods described can be applied to every type of case. Apart from its value to the beginner, the book contains much that the experienced anaesthetist or surgeon may read with profit.

Smoke Screen, by Samuel B. Pettengill, 126 pp., America's Future, Inc., New York, Cloth, $1.00.

This book was written to demonstrate that we are moving toward National Socialism, and that from now on, we should move away from it. Contents include: John Garner Gives Me a Job; Karl Marx-Immigrant; Socialism Through The Back Door; Taxation Sucks the Eggs; The Blight of Bureaucracy; The New Despotism; Freedom or Feudalism; They Let the Town Hall Burn; Balance Sheet; Aladdin's Lamp; Guinea Pig—1940 Model; Are We Licked? Samuel B. Pettengill, the author, is a former member of Congress from Indiana. His book is being widely distributed and has caused much comment.

Wartime Control of Prices, by Charles O. Hardy, 216 pp., The Brookings Institution, Washington, Cloth, $1.00.

As the United States embarks in 1940 upon a great emergency defense plan, comparable in its effects upon the national economy to a war program, one of the most vital questions that presents itself is whether a price inflation similar to those of former times is again inevitable. Is it possible to devise methods of financing the program and of controlling prices which will prevent a repetition of the experiences of the past? It is this question to which the investigation in this book was directed. The volume is divided into two major sections. Part I is a condensed analysis of the problems involved in the control of prices in wartime, leading to the conclusions with reference to the possibilities of price control and the methods which should be employed. It considers the influence of fiscal and credit policies, as well as more direct factors affecting the price situation. Part II, on which the analysis in Part I is in substantial degree based, is a review and appraisal of the price controls that were developed in the United States during the World War.

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THE BOARD OF STANDARDS of the Toilet Goods' Association is now issuing standards for cosmetic raw materials. Two standards have been issued within the past month, one for mineral oil (non-paraffin base), and one for mineral oil (paraffin base). These two standards represent six months on the part of the Scientific Advisory Committee and the suppliers according to S. L. Mayham, director of the Board of Standards.

Other products for which standards are now being developed are: Titanium dioxide, talc, zinc oxide, ozokerite, glycerine, spermaceti, zinc stearate, boric acid, paraffin, ceresine, lanolin, petrolatum, sulfonated castor oil, benzoinated lard, sulfonated olive oil, glycerol stearate, triethanolamine, clays, stearic acid, chalk, castor oil, beeswax, borax.

Members of the Scientific Advisory Committee are: A. B. Pacini, Affiliated Products; W. V. A. Clark, Allied Products; D. L. Couch, Elizabeth Arden Sales Corp.; J. Bartholomew, Bourjois; H. Gregory Thomas, Chanel; H. D. Goulden, Jacqueline Cochran Cosmetics; R. Schuler, Jacqueline Cochran Cosmetics; R. F. Heald, Colgate-Palmolive-Peet Co.; J. R. Martin, Coty; F. J. Austin, Hudnut Sales Co.; W. Langer, Dr. Langer Co.; H. C. Balsley, Merle Norman Cosmetics; H. Coutinho, Pinaud; J. H. Hall, Pond's Extract Co.; J. M. Jaffin, Vadsco Sales Corp.

IMPORT PROCEDURE: "Correspondent requests a list of foreign-produced articles on which Consular Forms 197 and 198 may not be required. This Administration has published no list of foods or drugs or other items which, when offered for entry into the United States, are not required to be accompanied by an appropriate declaration from the foreign shipper. Specifically, we have not insisted on a declaration on raw or refined sugar, fish, vegetables, fruits, and grains, such as wheat and barley in their natural state. It is required, however, on articles manufactured, dried, or treated in any manner, such as tea, coffee, cocoa, rice, nuts, crude drugs, and spices***. As a general statement, it may be said that all importations which are required to be covered by consular invoices must also be accompanied by shipper's declaration on Consular Form 198. Those shipments which need not be accompanied by consular invoices must be accompanied by shipper's declaration executed on Form 197."

PUFF DEODORANT: Used just like a powder puff, "Pat," is a puff deodorant by Pat Products, Cleveland. It can be easily carried in the handbag in a transparent case furnished with it, and is convenient to use at all times because it is entirely dry. The deodorant powder is contained inside the puff and just a pat is needed to deodorize. This is the first dry product version of the same thing done with liquids in the form of cleansing pads, deodorant pads, and nail enamel remover pads.

Practice Of Organic Chemistry, by Homer Adkins, S. M. McElvain, and M. W. Klein, Third Ed., 294 pp., McGraw-Hill Book Co., Inc., Cloth, $2.50.

The contents of this book may be divided into the following four parts: 1. Discussions, with numerous illustrative preparations, of the more important fundamental classes of organic reactions (pages 166-285. 2. A discussion of certain important mechanical operations that are necessary for the utilization of these reactions (pages 1-5; 125-166). 3. A group of fifty experiments (pages 11-110) which serve to illustrate the material in 1 and 2. These experiments are provided with cross references to the general discussions and may be interchanged with the illustrative preparations mentioned in 1 to suit the convenience of the instructor and the type of student. 4. General laboratory instructions for the students in the elementary courses in organic chemistry at the University of Wisconsin (pages 5-11). Over a period of years the authors have found these instructions to be helpful in the handling of the large laboratory classes in organic chemistry under their direction. The aim in the compilation of this book has been to help the student grasp the broader concept that a particular preparation illustrates, and at the same time to acquaint him with the details of current practice in laboratory operations.

Thorpe's Dictionary of Applied Chemistry, by Jocelyn Field Thorpe, and M. A. Whiteley, Fourth Ed. Vol. IV, Illus., 603 pp., Longmans, Green and Co., New York, Cloth, $25.

Volume IV of this great work is now ready for distribution. In this volume the policy is continued of combining the dictionary style with the use of the monograph where such treatment seems suitable. The monographs are for the most part self-contained and combine a history of the subject with a concise account of its modern position. There is a long monograph on explosives written by the late H. Shankester. Articles on Dust Explosions and on Coal dust explosions will be found of interest. Attention may also be drawn to the articles on "Drying and Dessication," "Dyeing" and azo-dyestuffs, giving in full detail the most recent advances in these fields. Probably of more direct interest to this industry is the complete dictionary material on distillation, edible oils and fats, emulsions and emulsification, enzymes, ephedrine, ergosterol, and evaporation. The Dictionary is not written entirely for experts, although it is expected that they will find in it much that will be useful to them. Its main object, as has already been stated elsewhere, is to present to the general chemist and the expert alike a summary and account of the present day position of chemical science, and to enable them to find, couched in as simple language as possible, a description of all that may be included in that term.

Text-Book of Physical Chemistry, by Samuel Glasstone, D.Sc., Ph.D., 1289 pp., D. Van Nostrand Co., Inc., New York, Cloth, $10.

This work was written specifically to fill the gap in the literature which deals with this subject in an elementary way, and that which is intended for students with a fair knowledge of physical chemistry. Its object is to take the student with a very elementary knowledge of the subject, such as might be gained in a normal course of general chemistry, and to lead him by easy stages and with the simplest mathematical methods to such as understanding of physical chemistry as will permit him to appreciate the more advanced treatises and the recent journal literature. Contents include: Atomic Structure and Atomic Spectra; Radioactivity and Isotopes; First and Second Laws of Thermodynamics; The Gaseous State; The Solid State; Changes of State; The Liquid State; Physical Properties and Molecular Structure; Dilute Solutions; Phase Equilibria; Chemical Equilibrium; Electrochemistry; Chemical Kinetics; Surface Phenomena. In an effort to make the book as comprehensive as possible a large number of topics have been dealt with. It is hoped that this will serve the purpose of making the book useful as a work of reference for all chemists, whether they be teachers or students or are engaged in some aspect of chemical industry.

History Of Pharmacy, by Edward Kremers and George Urdang, 466 pp., Illus., J. B. Lippincott Co., Phila., Cloth, $4.50.

The organization and plan of this "History of Pharmacy" go beyond the merely chronological order which is so common in books of this kind. Facts and events have been grouped in accordance with their organic relationships, thus presenting an integrated picture of the development of all parts of the history of pharmacy. The work is divided into four main parts as follows: Part I—Early Backgrounds in the Old World; Part II—The Rise of Professional Pharmacy In Europe; Part III—Pharmacy in the United States; Part IV—Discoveries, Inventions and Other Contributions to Society By Pharmacists.

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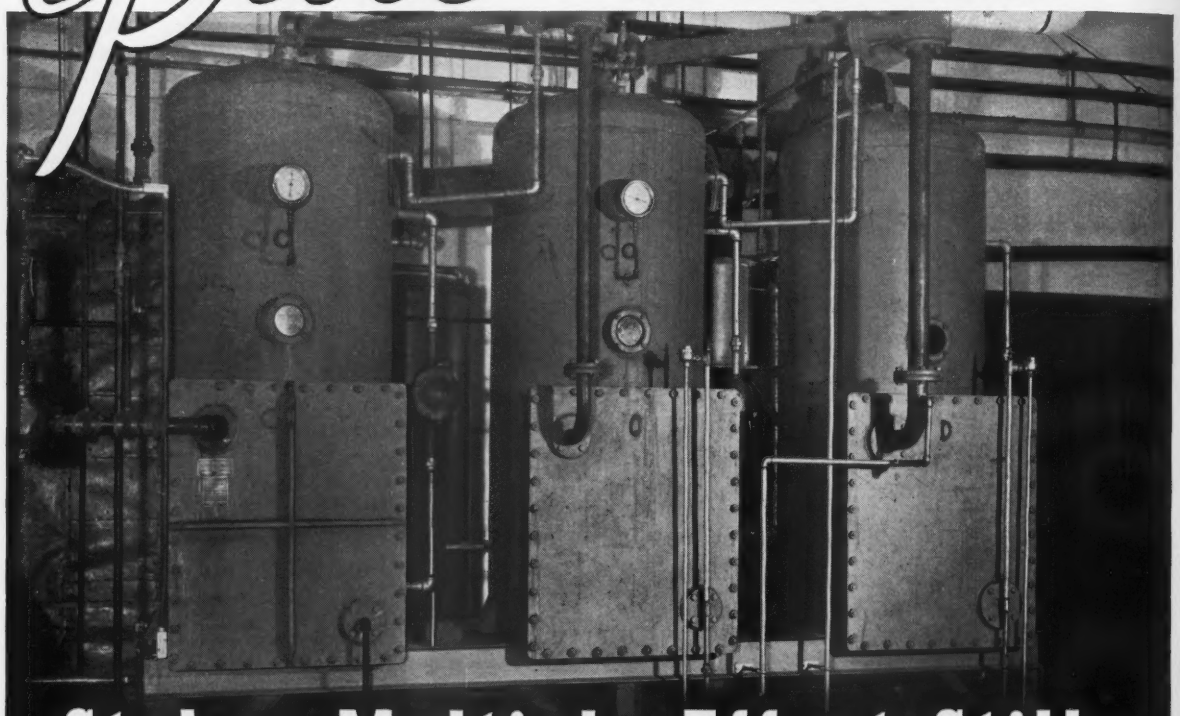

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PRODUCTION FORUM

BY Francis Chilson
PRODUCTION ENGINEER

HANDLING PAPERS

The next time you are confronted with the problem of installing equipment such as a pneumatic tube for handling papers and small packages between departments, we would suggest that you investigate the equipment made by James L. Baldwin and Co., 24-30 S. Clinton St., Chicago. This firm makes all manner of carriers, conveyors, and dumb waiters. They have developed an automatic setup for handling papers between departments by which the papers are carried between traveling belts. The belts are designed to receive and discharge the papers automatically at the appropriate stations. For instance, papers can be distributed from a master station to as many departments as desired and returned from these departments to the master station or to any intervening point. It strikes us that this method which has been used by insurance companies for a long time is particularly effective in multistory structures. We have been informed that Eli Lilly and McKesson and Robbins have used this equipment effectively.

FIRE DEFENSES

I am indebted to my friend, Leonard F. Maar, of the Safety Research Institute for the following notes on fire prevention:

"When the words 'national defense' lie on every tongue, particular emphasis should be placed on fire safety, especially in plants where such vitally important products as medicines and drugs are produced. It has been the experience of industry that during times of great activity the number of fires increase. While we are intent upon doubling and tripling the production of our factories, shops, and laboratories, vigilance against the common causes of fire may be relaxed, and it is the common causes, not the special hazards of the various industries, which are responsible for the majority of fires.

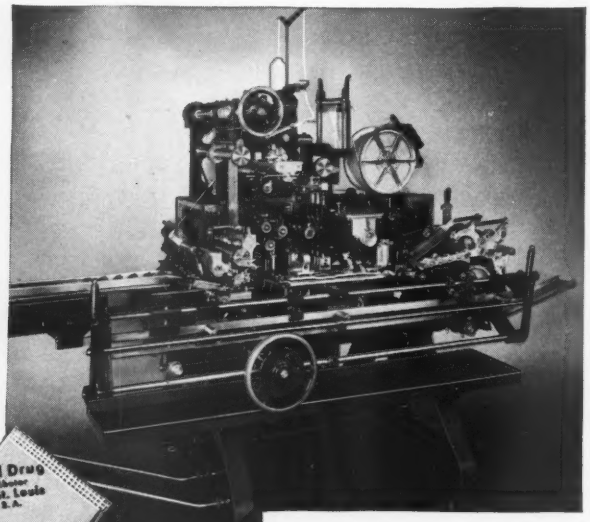
"The elimination of these causes, such as careless use of matches, violation of 'no-smoking' rules, and poor housekeeping, is largely a matter of employee education in fire prevention. But while prevention is a major factor in fire safety, protection is no less so. Our program of national defense, many people believe, will make the nation so strong that participation in combat will prove unnecessary. Nevertheless, we are preparing for the possibility of actual combat, just in case. So it should be with fire protection.

"Every effort must be made to prevent the occurrence of fire, but adequate training and equipment must be provided for emergencies that may occur. These emergencies may not always be accidental, either, judging by the uncomfortably increasing frequency with which the word 'sabotage' appears in the news—and fire is a major weapon of the saboteur."

"The first line of defense against fire is the hand extinguisher, since workers with extinguishers close at hand can attack fires as soon as they start. In most cases, such prompt action will make unnecessary the heavier artillery of hose and sprinklers. Where there are no special hazards, there should be at least one extinguisher for every 2,500 square feet of floor space and within 50 feet of travel distance. Where special hazards may be involved, as in the production of certain drugs and medicines, it is well to consult a fire protection authority for the types and sizes of extinguishers to be located at points of greatest risk.

"Automatic fire alarm systems, expanded sprinkler service, closer cooperation with professional fire departments, frequent inspection and servicing of fire fighting

A "made-to-order" wrap for tape bandage



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equipment, these are all important in an effective program of fire protection. A bit of advice given industry during the first World War may prove helpful now too. At that time, it was found that most mysterious fires occurred at night. Hence, management was urged to keep bright lights burning throughout the buildings and at all approaches to plants.

"In some plants employee fire brigades are being revamped into departmental brigades so that there will be a unit of workers in every department capable of handling a fire emergency. Periodic fire drills, in spite of our present jealous regard of time, will prove invaluable if ever prompt action is needed. Watchmen training is also being given considerable attention, so that they can 'spot' and report obvious hazards, handle extinguishers readily, and so on. Such training is equally valuable in fire prevention, for as people learn how to fight fire, they gain a sense of responsibility in preventing fire."

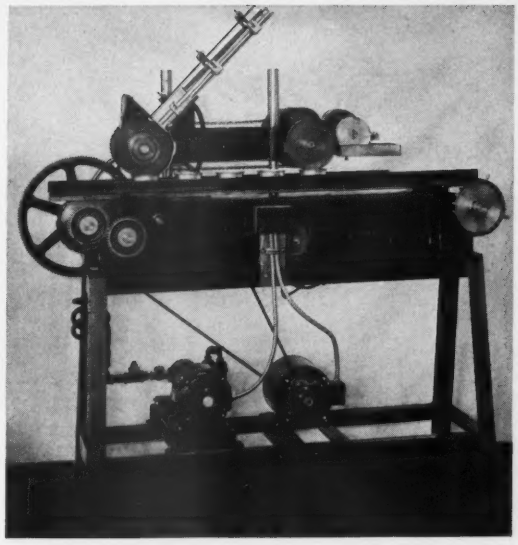
LIGHTNIN' MIXER

A lightnin' mixer is offered by the Mixing Equipment Co., Rochester, N. Y. This consists of a unit vertically mounted on a lantern ring. Because the removal of the entire lantern ring is a matter of a few seconds, maintenance men are sure to replace packing below the ring as well as above. This in turn lengthens operating life by reducing wear.

Operation of the puller is extremely simple. Once the upper packing is removed, the puller bolts are threaded into the lantern ring. Compressor nuts are used below the compressor ears to pull out entire assembly. No special tools are needed and the whole operation takes but an extremely short time. 'Fishing' for hard-to-remove lantern rings is completely done away with and risk of marring or scratching frozen rings, as well as possible damage to the shaft, is eliminated. This type of construction is well adapted to most types of stuffing boxes where repacking is a problem, as is shown by the fact that Mixing Equipment Co. stuffing boxes are built to withstand 150 lbs. per square inch pressure or 29″ of vacuum.

PACKAGE LABELING

Everywhere I go in the trade, production men are cursing the Government because of radical changes in label requirements. A great many firms are finding that their labels are too small to accommodate the copy which the Government forces them to place on the labels. In some cases firms have been forced to make the labels twice as large as they were formerly, with a result that they have had to place the labels around three sides of the container and in certain other instances they have attached the label with a loose wing.



In all cases where packages are small, the problem of adding copy to the labels has caused a great deal of difficulty not only in the design of the labels but in handling the packages and in production.

One means of solving this problem is offered by outserts which are made by Outserts Inc., 11 W. 42 St., New York, and with which you are all familiar. An outsert is in reality a circular which is applied to a container in the form of a label. It is possible to have an outsert with nine folds and in sizes ranging from ¾″ x ¾″ upward. The folds are made very compactly and the outer flap is tacked with a spot of glue so that it will not come open in transit or in handling.

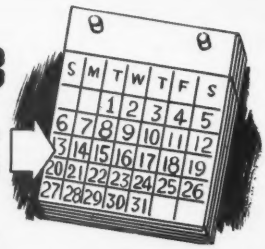
These outserts can be applied with standard semi-automatic and automatic equipment and in certain cases the Outsert Company will provide an automatic labeling machine capable of handling up to 200 packages per minute at a nominal cost. By this means you can put as much copy as you wish on your labels without interfering with the efficiency of your production operations. It seems to me that an outsert affords a better advertising medium than a circular because even in cases when containers are cartoned, the application of the circular or outsert to the exterior of the package puts it in a position where the consumer almost certainly will read it instead of throwing it away with the carton as he so often does.

SUPPOSITORY MACHINE

Arthur Colton Co., Detroit, have made available a cold-pressed suppository machine hydraulically operated and designed as a self-contained unit including motor and pump. This unit is more compact than the old vertical type and easier to operate. It still requires pre-forms however.

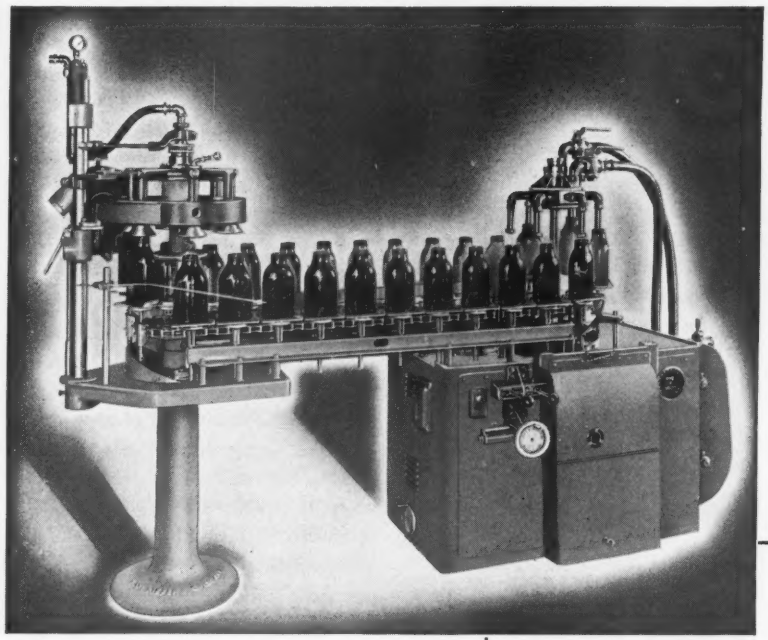
The same company also has introduced a new heavy duty rotary tablet machine capable of producing tablets from ⅜″ to 1″ in diameter and at speeds up to 750 per

DOES A 100% JOB
100% OF THE TIME



KIEFER

Combination Container Cleaning & Vari-Visco Filling Machine



FOR packaging facial creams, heavy liquids and viscous materials.

CLEANS containers thoroughly . . . with filtered compressed air.

FILLS quickly . . . uniformly . . . continuously . . . hour after hour . . . day after day.

Results will be gratifying to everybody in your organization interested in keeping production up and costs down.

Investigate this "100% machine" today!

WE BUILD completely automatic . . . semi-automatic . . . hand-fed equipment to clean, fill, close and convey bottles, jars and collapsible tubes.

. . . FILTERS . . . PUMPS . . . PERCOLATORS

THE KARL KIEFER MACHINE CO.

NEW YORK
BOSTON
CHICAGO

CINCINNATI, U. S. A.

LONDON, ENGLAND

SAN FRANCISCO
SEATTLE
LOS ANGELES

minute. The thickest tablet that can be turned out is 7/8". This machine can be used as a slugging press as well as a heavy duty tablet press.

TABLET DIFFICULTIES

When difficulties occur in making tablets they are usually caused by one or more of the following factors: An excess of powder in granulation is likely to cause the tablet to cap. Likewise an insufficient amount of powder may cause the same condition. The average tablet granulation should contain between twenty and thirty per cent. of fine powder. The amount of powder in granulations can be controlled to a large extent at the time the trays are dumped from the drying racks. If the granulation is run through a granulator equipped with a relatively fine screen and without any preliminary sifting, the granulator will not only break up the lumps but it will also further reduce the granules which are already fine enough. Some firms follow the practice of sifting the granulation as it comes off the trays and then granulating or grinding only the lumps. Other firms use coarse screens in the granulator on the theory that the granulation which is fine enough will fall through very readily without being pulverized.

When the granulation is ready for lubrication, it should contain not more than five or ten per cent. of powder that will pass 60 mesh. Since ten or fifteen per cent. of dry lubricants in the form of talc, starch, or metal stearate is added, it is obvious that the finished granulation will contain the requisite amount of powder. Granulations should run like sand without feeling like sand. The harder the granulation, the harder the tablet will be and the converse is also true. We have observed that best results are obtained by having a relatively soft granulation and by depending upon the compressing equipment to produce the required hardness. We have seen granulations which would pass through 40 mesh run very well, but in this instance the manufacturer wanted a hard tablet and an effort was made to make a hard granulation of 40 mesh. The granulation looked like sand and felt like it. When, however, granulation is too soft, the tablets will certainly split or disintegrate completely.

A second condition affecting the operation of the compressing equipment is the moisture content of the granulation. Granulations will not run well if it is too dry. With the exception of hygroscopic materials, the average granulation should contain two or three per cent. of moisture. Excessive dryness is one reason why tablet men are so often seen re-wetting with alcohol in order to get the granulation to run on the presses. If granulation is prepared well in advance of the compressing operations, it is desirable as a rule not to lubricate until the granulation is ready for compression. We have seen instances where thirty or forty drums of granulation, made up and lubricated a long time in advance, would not run at all on the presses. Since the purpose of lubricating material is to provide a free flowing granulation and to prevent its adherence to the punches and dies, it is obvious that the lubricating material must adhere to the surface of the granules. When lubricated granulation is allowed to stand too long—and this is especially true when oil is used as one of the lubricants—the granulation has a tendency to absorb the lubricating materials, thus destroying to a large extent the surface effect of the lubrication.

Another difficulty very frequently encountered is an insufficient amount of lubricating material. This will be noticed when the granulation does not run freely and when the punches stick to an excessive degree. Also improper lubricants will cause difficulties. There is no such thing as a universal lubricant. What will cause one type of granulation to run beautifully will gum up another. If you have been having trouble consistantly, some experimental work with a variety of lubricating materials is needed.

Excessive moisture is another condition frequently encountered and this is usually indicated by the tendency of the tablets to stick to the punches. Assuming you are using drying equipment with effective controls, you should always follow a schedule in regulating your drying time. Even when controlled dryers are used, granulation men often operate them by guess and by God and depend more on the feel of the granulation to determine when it has been properly dried than upon mechanical controls and a carefully worked out drying schedule.

As to equipment, it is axiomatic that punches and dies should be kept in perfect condition. The speed of the compressing equipment should conform to the character of the granulation. Hard, free flowing granulations can be turned out at the maximum speed of the press, whereas the softer granulations which will not flow so readily will require slower operating speed. Variations in tablet weights can be controlled only by frequently weighing some of the tablets as they are compressed. The variation is often caused by the stratification of the granulations in the supply hoppers. Although the granulation may be perfectly mixed when it is put into the supply hoppers, the vibration of the equipment will cause a gradual stratification.

When a granulation is not fairly uniform as to particle size and when it requires that the press be operated at less than maximum speed, it is not always desirable to keep the hoppers fully loaded. The longer the granulation is in the hopper, the more it will stratify under such circumstances. As a matter of fact, we have felt that in most cases the hoppers of tablet presses are too large and that some thought should be given to the use of mixing hoppers which would keep the granulation in a constantly uniform condition.

PORTABLE TABLE

O. Johnson Mfg. Co., Brookfield, Ill., manufactures a line of portable tables which may be of interest to you since some of the models are fitted with adjustable tops which can be elevated to suit particular requirements.

THE MOST *Flexible* FILLER YOU HAVE EVER SEEN

So versatile it will fill practically *any* kind of container with almost *any* kind of material, the Stokes & Smith Universal Filler, with Gross Weight Scale, comprises four different machines in one single unit. These are:

1. *A gross weight scale with auger feed.*
2. *A volumetric filler measuring material by the volume of the package.*
3. *A volumetric filler measuring material by the turns of the auger, a very precise way for the smaller quantities.*
4. *A packing machine to compress the material into packages.*

Changing from one type of container to another, even from any paste to free-flowing powder, is only a few minutes work.

May we arrange a demonstration for you?

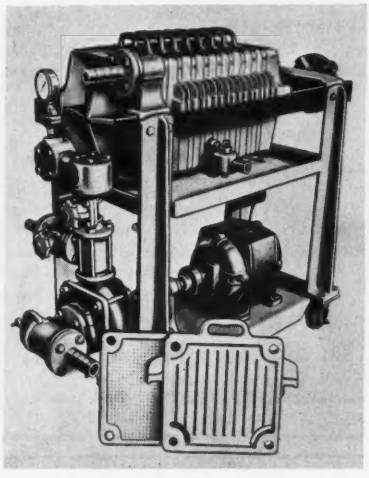
STOKES & SMITH Co
PACKAGING MACHINERY — PAPER BOX MACHINERY
4912 Summerdale Ave., Philadelphia, U. S. A.
British Office: 23, Goswell Road, London, E. C. 1

S & S G-1 Filler

QUICK CLEANING FILTER

A new filter press has been developed by T. Shriver and Co., 850 Hamilton St., Harrison, N. J., for the purpose of reducing the amount of time and labor required to remove the filter cake after filtration has ceased. Manual cleaning of the filter press is ordinarily resorted to and as this work takes up a large share of the filtration cycle, considerable saving in time can be effected by this new method of cleaning out the filter press.

In general this quick cleaning or sluicing filter is not unlike the usual type of plate and frame pressure filter. However, special frames have been designed with ribs which support the filter cloth so that pressure can be



applied behind them. The operation of the sluicing filter for filtration is in the usual manner. When the filter chambers are full of solids, filtration is stopped and the remaining liquid drained off. Water from 30-50 pounds pressure is then introduced and the drain cocks in the frames opened. This causes a sudden flow of water backwards through the filter cloth which loosens the cake and washes it out as a thin slurry through the drain cocks. Short surges of sluicing water filling each chamber and then released by opening each cock in turn effect a quick removal of the cake. When sluicing is completed, the next filtration cycle may be started at once. Thus a long series of runs can be made without opening the filter for cleaning. The time required for sluicing the filter is much shorter than that required to open and manually clean a filter of the same size. Since sluicing involves only the manipulation of a few valves, one man can clean the largest filter with ease. It has been found by test that the filtrate yield using the sluicing method is as much as 30% greater than that from filtration involving manual cleaning. The total time required for a series of sluicings is materially less than for opening and manually cleaning a filter press. As the filter cake is in the form of a slurry when removed from the filter press, it can be readily disposed of without manual labor.

The unit illustrated here is a 12" closed delivery type filter press having eight chambers and equipped with a large outlet cock for sluicing purposes. On larger filtering units individual outlet cocks are installed on each frame. These can be manipulated to concentrate the sluicing water in any one chamber so as to assure more complete discharge of the slurry.

DRUM HANDLING

In storing drums and barrels horizontally on racks, it has always been a problem to remove and replace a single drum from a tier containing a variety of drums. In order to get at a drum of a particular material, it has been necessary to do a considerable amount of rehandling. This rehandling can now be eliminated by using a portable drum elevator equipped with side arms which fit under the center lines of the drums or barrels on both sides. This device thus makes it possible to pick an individual drum out of a rack endways. The equipment is made by Service Caster and Truck Co., Albion, Mich.

INDUSTRIAL DESIGNER

I want to bring to the attention of my friends in the packaging equipment field and also in the trade generally that I have been employing the services of a young industrial designer, Mr. Arthur Meggett. I think he has a lot on the ball and I am anxious to help him establish himself. Unlike many of the artists who are in this field, Meggett has had many years of experience in mechanical drafting and in the design of sheet metal work. Hence, he has enough drafting and engineering experience to be practical as well as artistic. He is not temperamental.

Meggett has no delusions of grandeur about his fees since he realizes that he must first establish his reputation based upon a lot of sound work. Indeed, he is willing to submit some drawings on a speculative basis to show you what he can do. If you find, as I have found, that he really has a lot to offer, then you can work out a fee with him and I am sure you will find him very reasonable.

The next time you are developing any new equipment or you wish to streamline some equipment which is already installed, I wish you would get into touch with me and I in turn will put you into touch with Meggett and from that point on you will be working together as principals. Meggett is not in my full time employ and, excluding the work he does for me from time to time, he has no connection with my business.

DEHUMIDIFYING

Pioneer Eng. and Mfg. Co., 37 Melbourne Ave., Detroit, is offering a chemical type dehumidifying unit which is available in a great many capacities. These units have been used, it is claimed, in applications where it has been necessary to maintain as low as three or four per cent. relative humidity at 68° F. The company also claims to have made a number of pharmaceutical applications. These units are all self-regenerating. This company furnishes units which can be applied to air compressors as well.

NEW COLTON BENCH TYPE COATING STAND

(MOTOR DRIVEN)

SPECIFICATIONS

¼ H.P., 1750 R.P.M., 110 V.—1 Phase Master Right Angle Geared Head Motor

Revolutions of Pan	**36 per minute**
Bench Space	**24″ x 14″ x 26″**
Approx. Net Weight	**100 lbs.**
Approx. Gross Weight, Boxed for Export	**175 lbs.**

THIS newly designed Bench Stand (Motor Driven) is far superior to the old Belt Drive from countershaft. The maximum diameter of Pan (either Copper or Galvanized Iron) recommended is 20″ diameter and pans are interchangeable on Stand.

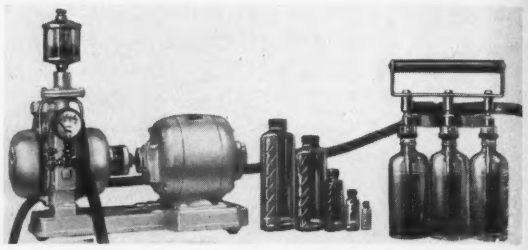
This Motor Driven Stand lends itself particularly for small batches and especially as a teaching adjunct for Universities and Colleges.

ARTHUR COLTON CO.

2620 EAST JEFFERSON AVENUE

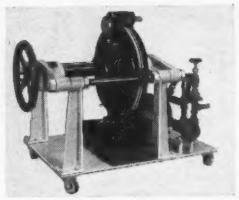
DETROIT, MICHIGAN, U. S. A.

ESTABLISHED 1884



HORM LOW-COST FAST-FILL BOTTLE FILLER

From drams to gallons, even, quick-filling with any free-flowing liquid. The Horm Portable Vacuum Bottle Filler does a CLEAN, no-drip job. No liquid goes through the pump. Uniform performance guaranteed. A real time, money and labor-saver.



HORM LOW-COST FAST-FILTER

This junior model free-flow, rapid-change filter operates on two filter disks, which can be built up to eight disks as required. Positive rotary gear pump handles three to five gallons of liquid per minute.

Write now for new, complete catalog of Horm products

F. R. HORMANN & CO., INC.

18 Bergen Street — *Equipment Engineers* — Brooklyn, N. Y.

Western Representatives, C. J. Sutton Co., 1,005 N. Main St., Los Angeles, Cal.

FILTERS TANKS MIXERS FILLERS

Really

HERE'S A GOOD MIXER

It's the *new* ERTEL SWIVEL JOINT MIXER —its development based on ERTEL'S experience with various makes and types of mixers. Find out now how the ERTEL SWIVEL JOINT MIXER can increase efficiency and minimize accidents in your mixing department.

MOTOR CAN'T SLIP

while making angle adjustments on the mixer shaft. This one feature alone is a "must" you can't afford to be without. Write now for further details and prices. You won't be obligated.

WRITE FOR PARTICULARS

ERTEL ENGINEERING CORPORATION

EXECUTIVE OFFICES AND FACTORY AT
42 MILL STREET, KINGSTON, N. Y.
SALES OFFICE AND SHOWROOM
40 WEST 48th STREET, NEW YORK, N. Y.
MANUFACTURERS OF LIQUID HANDLING EQUIPMENT

BAG FILLER

Fred Goat Co., 314 Dean St., Brooklyn, is issuing a semi-automatic gross weigher for packaging dry materials. This equipment is furnished with a bag or envelope filling attachment so that it can be used for samples. In filling with bags or envelopes, it is claimed that a high degree of accuracy is obtainable in dealing with weights of a fraction of an ounce.

WASTE DISPOSAL

If you make a practice of burning up scrap wood, corrugated cases, paper, and similar material, the Gruendler wood hog and shredder will find an application in your plant. The same type of equipment can also be used for grinding crude drugs and for breaking up scrap bottles. It is made by Gruendler Patent Crusher & Pulverizer Co., St. Louis, Mo.

HOT WATER HEATER

The Schwab Machinery Co., 201 Lucas St., Toledo, manufacture a compactly designed little unit for making hot water by mixing cold water with steam. The unit is equipped with the necessary thermostatically controlled valves and gauges to keep the hot water at a constant temperature. Capacities from 150 to 2,400 gals. per hour can be obtained. A unit like this is very useful in washrooms and in local areas where steam and water are available but to which it would be expensive to run long hot water lines.

COLLAPSIBLE TUBE SUBSTITUTES

Users of tin and aluminum collapsible tubes are becoming quite worried over the possible scarcity of both tin and aluminum. If the Japanese take over the Dutch East Indies and if airplane and other military equipment requirements become so great that the use of aluminum for industrial purposes will be restricted in this country, then collapsible tube users will be on a spot. I was informed recently that already in Canada the use of aluminum for collapsible tubes had been prohibited. This brings up the question of possible substitutes.

As you know, in Europe lacquer lined pasteboard collapsible tubes have been employed for some time. A number of years ago my attention was brought to a wax-impregnated paper board tube which had been used for packaging lubricating grease and which was very cheap. I believe it was patented. However, it did not make much headway in the drug trade because it was not particularly ornamental.

Reynolds Metal Mfg. Co., 155 East 44th St., New York, have produced a paper board lined on both sides with foil and this type of board might be useful in fabricating collapsible tubes. Similarly various grades of parchment might be employed as this would give adequate protection against corrosion, moisture, and oil. Pliofilm and similar plastic materials might be used in making tubes. Already the Celluplastic Corp., 44 Avenue L., Newark, N. J., have made collapsible tubes of some type of transparent cellulose material.

Although a scarcity, on the other hand, may never develop in this country, and in fact, I was assured by an official of one of the big tube companies that it was decidedly not his opinion that any scarcity would develop, nevertheless ordinary common sense indicates the advisability of experimenting with substitutes before any scarcity develops so as to be ready for the event.

BLOWERS

The portable "Tornado" blower made by Breuer Electric Mfg. Co., 5100 N. Ravenswood Ave., Chicago, and used for blowing out motors and other types of equipment has been improved by the addition of attachments which make it possible to use the same unit as a vacuum cleaner, thus improving its usefulness in cleaning operations where it is desirable to collect the dust.

Speaking of vacuum cleaning, I would like to call your attention to the new heavy duty commercial vacuum cleaner produced by Ideal Commutator Dresser Co., Sycamore, Ill. This is a very effective job and is well designed.

A similar unit is offered by Electric Vacuum Cleaner Co., 1734 Ivanhoe Rd., Cleveland, and commends itself as being one of the simplest commercial vacuum cleaners I have seen. By lifting off the top, the entire dirt bag can be removed directly from the receptacle.

SEND FOR A COPY

Shaw-Perkins Mfg. Co., Oliver Bldg., Pittsburgh, have developed a new line of radiators called convector-radiators which are very much more efficient than the ordinary cast iron type, besides looking infinitely better. If you are laying out an office or a laboratory and want something really nice, this is it.

Trane Co., LaCrosse, Wis., have issued an exhaustive bulletin on all types of unit heaters covering many different applications.

Handling Equipment Co., 30 Church St., New York, have available an extensive series of bulletins describing the multiplicity of truck conveyors, lift trucks, cranes, and other handling devices. This firm represents a number of organizations and it may be of help to you in the handling problems which arise in your work.

U. S. Electrical Motors Inc., 200 E. Slauson Ave., Los Angeles, have redesigned their line of electric motors and have introduced a new totally enclosed unit which is beautifully streamlined.

Eastern Eng. Co., 45 Fox St., New Haven, Conn., want you to send for a new booklet on midget centrifugal pumps. These pumps are offered in a wide variety of sizes and have a surprisingly large capacity considering their diminutive size.

Sparkler Mfg. Co., 1210 Webster Ave., Chicago, have issued a new bulletin on the Sparkler filter. This compact little job was called to your attention some time ago because of its extreme flexibility. It can be used with any type of filter medium.

Tombarel

AN AMERICAN PERFUME LABORATORY

with a background of over 100 years in the production and creation of perfume materials

Our laboratory, established in New York City several years ago, was originally designed to give a more prompt and personal service to TOMBAREL'S customers in this market.

Circumstances have made it particularly fortunate that this laboratory, fully equipped and working parallel to the TOMBAREL laboratories in Grasse, France, could immediately assume the responsibility for service to TOMBAREL'S American customers.

New odor notes of particular interest and value, which have been so recently created in France, can now be promptly supplied from here.

TOMBAREL PRODUCTS CORPORATION

L. J. Zellinger, President

9 East 19th Street, New York, N. Y.

CERTIFIED COSMETIC COLORS

for

LIPSTICKS FACE POWDERS
ROUGES COMPACTS LIP POMADES
NAIL POLISHES

also

COSMETIC INORGANIC PIGMENTS
COSMETIC TITANIUM DIOXIDE

"Colors Designed to Meet Every Requirement"

Samples and full particulars cheerfully submitted.
Our laboratory is ready to assist in your problems.

Ansbacher-Siegle CORPORATION

Manufacturers of Fine Chemical Pigment Colors

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BILE SALTS
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4221 So. Western Ave., Chicago, Ill.

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816 First Ave., New York
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619 Clark Ave., St. Louis

ROSS
45 GALLON CHANGE CAN MIXER

For mixing standard batches of Ointment Bases, Deodorant Compounds, Tooth Pastes, Shaving Creams, and various similar preparations.

Cover over mixing can retards evaporation and eliminates dust.

Totally enclosed guards on all gears . . . anti-friction bearings . . . counter-balanced raising arm with locking clamp. Can be furnished with stainless steel cans and stirrers when desired.

ROSS Change Can Mixers are made in sizes from 2 to 150 gallons capacity.

CHARLES ROSS & SON COMPANY
Manufacturers of Mixing and Grinding Machinery Since 1849
EMERSON PLACE - BROOKLYN N.Y. U.S.A.

Here's what you'll like about the new

...**"HAGERTY HANDY FILLER"**

- Durable
- Moderately priced
- Eliminates spilling
- Simple to operate
- Convenient sizes
- Light construction

The most practical hand filler for creams, lotions and liquids.

Write for illustrated folder and prices

HAGERTY BROS. & CO.
10 Platt Street — New York, N. Y.
Est. 1849

You can't see them, but—there are *permanently* lost customers in this picture. The product is right . . . it sells well . . . the jar and label get attention . . . Yet—some purchasers won't be satisfied. They will tell friends, who may also become critical and change to other brands. And the manufacturer will *never know* the number of potential sales lost because of *Underfilled Jars!*

Such sales-reducing factors can be prevented by using the new FMC Special Filler that insures

NEW "Predetermined Level" FILLING

ONE JAR or 100,000

• This new FMC Filler fills EVERY JAR to the same predetermined level, with an attractive, full "crowned" appearance!

Faster, More Accurate Filling AT LOWER COST

This FMC Special Filler has a filling control valve that automatically compensates for unavoidable variations in jar capacities. It eliminates costly human errors . . . prevents the overfilling and the labor of cleaning up smeared jars, labels, moving belts and capping machines.

Fills any free-flowing light or heavy liquids or pastes —hot or cold—into any size, wide mouthed bottles or jars.

ASK FOR THIS DEMONSTRATION!

Send us a quantity of your product and containers. We will fill them with FMC Special Filler and send to you—or you can have one of your Representatives present to watch the filling operation. And we'll tell you how fast one operator can fill them. *No obligation.*

FOOD MACHINERY CORPORATION
(Sprague-Sells Division)
HOOPESTON, ILLINOIS

ESTABLISHED 1845

BATZOUROFF & Co.

SOFIA, BULGARIA

PURE OTTO OF ROSE

MODERN DISTILLERIES AT:
KARNARE KALOFER
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SOLE DISTILLERS BY
VACUUM PROCESS

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EXCLUSIVE AGENTS U. S. AND CANADA:
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CHEMICAL KESSCO PRODUCTS SPECIALTIES

INSECT REPELLENT #4

Efficient Non-Toxic Repellent Base

FATTY ACID ESTERS

Glyceryl–, Ethylene–, Propylene–, Diethylene Glycol–,
Mono-Stearate, Mono-Laurate, Mono-Myristate, Mono-Oleate, Mono-Palm, Mono-Ricinoleate

Methyl–, Ethyl–, Propyl–, Butyl–,
Stearate Laurate Palm Myristate Oleate

Also esters of other Fatty Acids and Alcohols.

Kesscowax AC (Acid Emulsifier)

Triacetine C.P.

Cycloform (A base for Suntan Preparations)

For Samples, Specifications or Suggested Formulae, WRITE TO

KESSLER CHEMICAL CO., Inc.

DELAWARE AVE. and MIFFLIN ST. ESTABLISHED 1921 PHILADELPHIA, PA.

The COMPOUNDER'S CORNER

TABLET DISINTEGRATION

Two main types of methods for testing the disintegration of tablets are available: (1) Those which test for mechanical resistance of the tablet against knocks and general handling and (2) those which test for the speed at which the tablet will break up into its original granules when placed in a specified liquid at a specified temperature. It is said that a tablet "should be capable of resisting a fall of several feet onto a hard surface, and on storage little or no powder should accumulate in the container." Among the type (2) methods, perhaps the best known is that where the tablet is placed carefully upon the surface of a column of water (or artificial digestion fluid) about 6 or 8 inches high. The tablet is required to disintegrate before it reaches the bottom. Another method requires a vertical glass tube carrying a wire mesh at its lower end and containing standard digestion fluid maintained at 37° C. The tablet is dropped down the tube upon the mesh; next a hog-bristle paint brush is lowered gently down to the top of the tablet and then raised again. This is repeated at regular intervals until the tablet is disintegrated. The author has designed a simple apparatus by which it is possible to determine mechanical resistance and disintegration in absolute values. The apparatus consists of a balanced beam at one end of which is a scale pan of sufficient capacity to carry about 5000 Gm. At the other end is a pivoted arm carrying a square of stainless steel from the center of which a rectangular hole has been cut. This square of steel hangs vertically and passes through a rectangular hole in a second square, placed horizontally and supported entirely by the base of the balance. The support is so designed that the horizontal "table" can be immersed in any desired liquid. Details are shown in the form of any illustration. In addition, a photograph of the entire apparatus is included with the author's article. A table is given which compares the "average dry breaking weight" and the "average wet breaking weight" of a number of tablets; also, the table lists the "disintegration ratio" of the tablets examined for disintegration. The author puts forth the following tentative suggestions: Dry breaking weight—not less than 500 Gm.; wet breaking weight—not more than 100 Gm.; disintegration ratio—not less than 30 Gm. *C. L. M. Brown, Pharm. J. vol. 143, p. 173.*

"Do you expect me to go to France to get you perfume?"

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COLLORESIN is a specially prepared methyl cellulose which is water soluble when properly manipulated. With it a jelly can be made which is of value in the pharmaceutical and cosmetic industries which is comparable in viscosity to tragacanth jelly.

The shortage and high price of the gum makes COLLORESIN of particular interest at this time. It is of interest at all times because of its stability, its freedom from attacks by mold and its steadiness in price.

This product comes in a number of different viscosities for different purposes. *General Drug Co., N. Y.*

MOLDOL ANTISEPTIC

Pfaltz & Bauer, Inc., Empire State Bldg., New York City are directing attention of the trade to high efficiency of Moldol for use in antiseptics and disinfectants due to its unusual bactericidal value.

The phenol coefficient of Moldol, in accordance with the Rideal-Walker test against B. Typhosus is 140 in aqueous solution and 40 in soap solution. Staphylococci were killed completely in ten minutes in a solution of 0.1% (three times as fast as corrosive sublimate). Moldol has proven particularly effective as a disinfectant for tubercular sputum. It is indicated as a personal antiseptic in combination with caustic soda or soap, as antiseptic soap for surgeons, for general hospital or sickroom use.

PROTECTIVE CREAM

As an alternative to the use of mechanics' hand soaps, products have been offered which serve to protect the hands from collecting deep-seated grime. These products are to be applied to the hands before work is started. One such product is sold as a cream to be rubbed into the hands, consisting of a form of vanishing cream to which has been added about 20 per cent. of china clay. The clay is supposed to fill the pores of the skin, preventing deposition of dirt there. A liberal amount of glycerine is present to give an emollient effect. Subsequent washing of the hands in the ordinary manner removes the cream preparation along with the dirt adhering to the outside of it.—*A. Rayner. Soap, Perfumery & Cosmetics, 13, 438 (1940).*

COCONUT OIL SOAP SOLUTION

The Brit. Pharm. Codex solution of coconut oil soap becomes cloudy; filtration yields only temporary clarity, and this at the expense of the soap content. The difficulty is due to the use of NaOH in the Codex formula. The following formula gives a solution that remains sufficiently clear to filter bright, without undue loss of soap: Coconut oil 5 lb., KOH 1 lb., oil of lavender *q. s.*, distilled water to 18 pints. Melt the oil, add 35 oz. of KOH solution (containing 1 lb. KOH), mix thoroughly, keep warm for a week, add the rest of the distilled water, dissolve by heating without boiling and place the warm solution in separators. When the separation is completed 24 hours later, draw off the clear soap solution, filter through white filter paper, add the preservative and bottle the solution for storage.—*C. Spain, Chem. Prod. vol. 3, p. 31.*

SUPPOSITORIES

If suppositories are to be molded, the powder must be very finely pulverized (Sieve No. 6) and moulding must be done at as low a temperature as possible (28° C.). Cacao butter should not be heated any longer than necessary. Studies were conducted on the effects of admixture of yellow wax or spermaceti with cacao butter upon the m. p. of the mixture. If cacao butter was melted with yellow wax, up to 3% admixture of wax lowered the m. p. of cacao butter; over 5.66% admixture of wax rasied the m. p. above 37° C. In order to raise the m. p. of cacao butter, more than 3% wax must be added, but if over 5% is added the m. p. will be above body temperature. If cacao butter was melted with spermaceti, up to 18% admixture of spermaceti lowered the m. p. of the cacao butter; 20% spermaceti in the mixture gave practically the same m. p. as pure cacao butter; over 28% of spermaceti in the mixture raised the m. p. above 37° C. The accuracy of weight of suppositories made by various technics was compared. Moulded suppositories had an average weight error of 0.65%; while for pressed suppositories the average weight error was 0.73%. The greatest weight deviations of molded or pressed suppositories were 3%. For hand-rolled suppositories the average weight error was 6% and the maximum deviations were as high as 27%. Moulding or pressing were more accurate methods of controling dosage in suppositories than was hand rolling.—*A. Jermstad and B. Fretheim, Arch. Pharm. Chem., vol. 47, p. 2, 39.*

SULFANILAMIDE PREVENTING PERITONITIS

Lockwood and Ravdin began in 1938 to resort to sulfanilamide in the treatment of inflammatory and traumatic bowel perforations. Impressed with some of the recoveries, they have introduced prophylactic use of sulfanilamide in all bowel resections. In no case was there clinical evidence of peritonitis during the postoperative course. One death was due to coronary occlusion on the first postoperative day. This series is small and of doubtful statistical significance. The authors, however, have been encouraged by the results of prophylactic sulfanilamide therapy in the first year of its trial. They present six instances of inflammatory and traumatic perforation of the intestinal tract in which sulfanilamide treatment was used. The recovery of the two patients with local peritonitis associated with sigmoid diverticulitis is perhaps not at all remarkable, but in the other four cases the nature of the lesions found at operation and the immediate condition of the individual patients was such as to lead the authors to believe that the prognosis was extremely grave. Surgeons have been hesitant to employ sulfanilamide and its derivatives in the prevention and treatment of peritonitis of intestinal origin because of a well entrenched belief that sulfanilamide is effective only in infections due to certain cocci. The authors gained the impression that, under special experimental or pathologic conditions which favor drug action, sulfanilamide may have some degree of antibacterial effect against almost all species of pathogenic bacteria. Peritonitis of intestinal origin is a polymicrobic infection, and the bacteria concerned in its production are relatively, but not entirely, resistant to sulfanilamide bacteriostasis. This bacteriostatic effect may become significant in the peritoneal defense against postoperative peritonitis if an adequate concentration of the drug is present, if the number of contaminating organisms is small, if tissue necrosis is minimal and if the usual cellular defense is present. Clinical experience is as yet insufficient to warrant a final conclusion as to the effectiveness of sulfanilamide in the prevention of peritonitis. *Surgery, vol. 8, p. 43.*

Perfumers Shelf

ESSENTIAL OILS

Bitter Almond Oil contains 75 to 80 per cent. of benzaldehyde, benzyl alcohol, phenoxyacetonitrile, and hydroxyanic acid. It is obtained by the steam distillation of bitter almonds, which yield from 0.5 to 2 per cent. of the oil. The oil is often adulterated by the addition of benzaldehyde, nitrobenzene, or turpentine.

Anise Oil contains 80 to 90 per cent. of methyl chavicol and anise ketone. Anise is cultivated in Russia, as well as in Spain, France, Germany, and Scandinavia. Distillation yields 1.9 to 3.2 per cent. of the oil. The oil solidifies at 15° C. and is adulterated by the addition of turpentine, alcohol, spermaceti, etc.

Angelica Oil contains phellandrene, methylethylacetic acid, and hydroxypentadecylic acid. Distillation of roots gives 0.25 to 1 per cent. of a slightly yellow oil with an agreeable odor.

Spike Oil contains geraniol, borneol, linalol, terpineol, cineol, camphene, pinene. It has a more camphoraceous odor than lavender and resembles a mixture of lavender and rosemary. Distillation yields 0.5 to 0.7 per cent. of the oil which is often adulterated by the addition of turpentine.

Star Anise Oil contains 80 to 90 per cent. of anethol, anisic acid, anisaldehyde, safrol, methylchavicol, ethylhydroquinone, pinene, and phellandrene. Distillation of the fruits gives 3 to 5 per cent. of an oil which solidifies on cooling because of its high anethol content. It is very pale yellow in color and possesses the odor of anise.

Bay Oil contains eugenol, methyleugenol, citral, myrcene, chavicol, methylchavicol, phellandrene. Bay oil is obtained by the distillation of the leaves of myrcia acris, a tree which grows in St. Thomas, Jamaica, Guadaloupe, and Barbadoes. It is a yellow liquid with a sharp odor, recalling that of clove oil. It is essential in the foundation of Bay Rums.

Bergamot Oil contains from 36 to 45 per cent. of linalyl acetate, linalol, bergaptene, limonene, and dipentene. It is obtained by pressing the fruits of citrus bergamia, and is a yellow oil almost always colored green by the presence of copper. Bergamot has a very smooth odor, and is extremely valuable as the basis of many perfumes.

Bois de Rose consists of 90 per cent. linalol along with geraniol, terpineol, and methylheptenone. It is obtained by the distillation of linaloe wood from Mexico and French Guiana. The yield ranges from 7 to 10 per cent.

Cassia Oil contains 75 to 90 per cent. of cinnamic aldehyde along with cinnamyl acetate. Chinese canaga has a special odor and is much smoother than the Ceylon grade. It is often adulterated by the addition of oil of cedar, rosin and kerosene.

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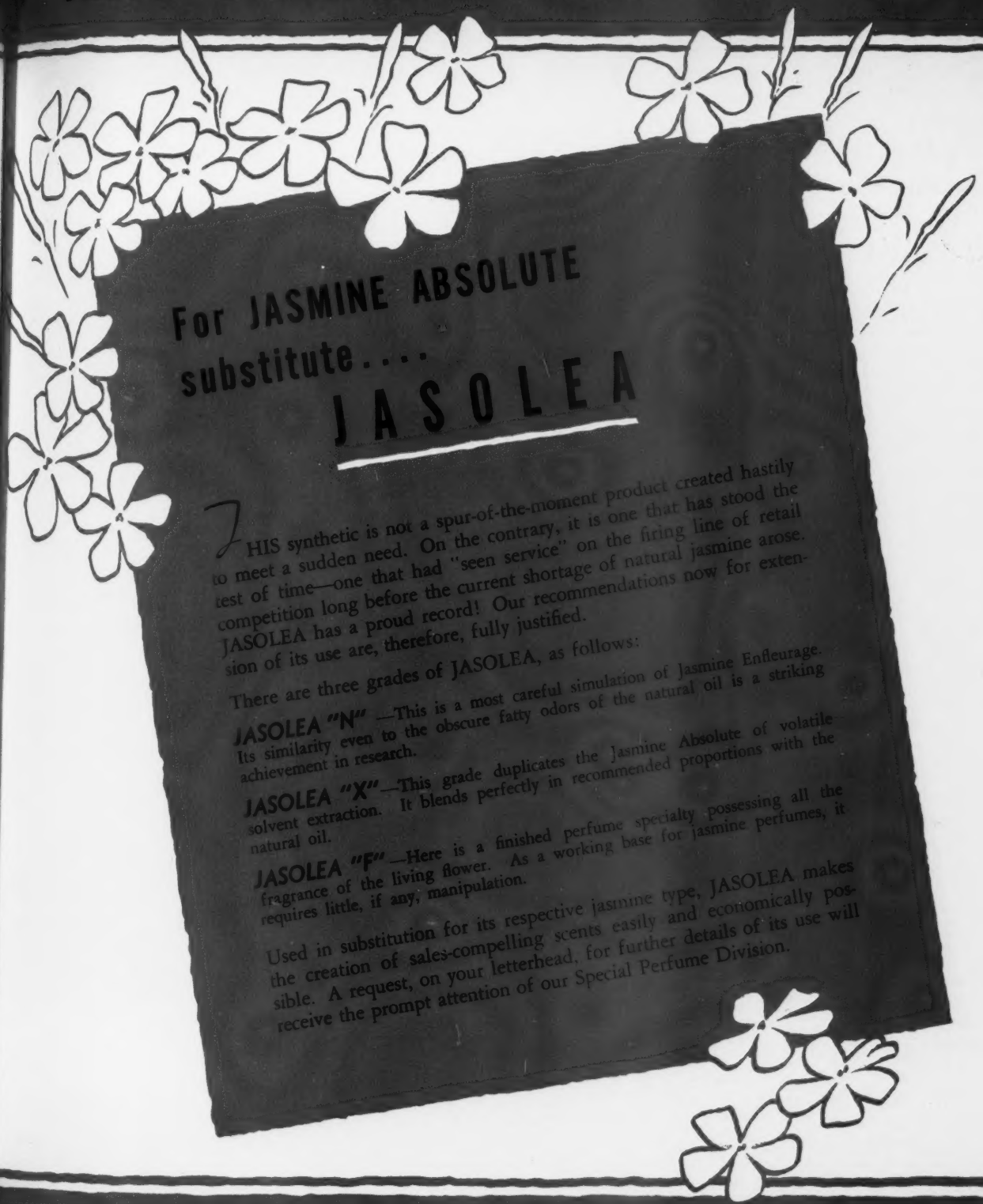

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Used in substitution for its respective jasmine type, JASOLEA makes the creation of sales-compelling scents easily and economically possible. A request, on your letterhead, for further details of its use will receive the prompt attention of our Special Perfume Division.

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Your request in writing will bring further interesting particulars.

Top: An orchard of bitter orange trees in Southern France.

Center: In Paraguay, native uses machete to remove leaf material for distillation.

Bottom: Charging native Paraguayan still with leaf material for distillation of petitgrain oil.

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Caraway Oil contains d-limonene and carvone. Steam distillation of caraway seeds gives an oil with an agreeable odor. Dutch seeds give a much larger yield than the German variety. The oil is slightly yellow at first but becomes much darker with age.

Geranium Oil contains 80 to 90 per cent. of geraniol and citronellol, linalol, methylheptenonementhone, dipentene, and various acids. The composition of the oil varies according to its source and geranium oil is used as an adulterant for rose oil.

Clove Oil contains methyl alcohol, furfural, methylamylketone, eugenol, acetyleugenol, and caryophyllene. Distillation of cloves gives 15 to 18 per cent. of the oil. The oil is widely used in perfumery and soaps and is a source for eugenol.

Lavender Oil contains pinene, cineol, linalol, borneol, geraniol, amyl alcohol, linalyl acetate, and linalyl propionate, butyrate and valerianate. English lavender contains much cineol, limonene and about 10 per cent. of linalyl acetate. The oil is widely used in perfumes and soaps must be part of all good Eaux de Cologne. *Felix Cola.*

HAIR DYE PATENT

Dyes which color gray hair red-blond to brown comprise triacetyl compounds of the general formula 1, 2, 4-$(CH_3OCO)_3$ *RX*, where *R* stands for benzene or naphthalene residues and *X* stands for hydrogen, methyl, ethyl or hydroxyethyl.—*Erich Lehmann, assignor to Winthrop Chemical Co. U. S. pat. 2,162,458, June 13, 1939.*

HAIR RINSE PATENT

Compositions for treating the hair contain phthalic acid, potassium acid phthalate, furoic acid and a water-soluble acid coal-tar coloring matter.—*Russell R. Frew, assignor to Golden Glint Co. U. S. pat. 2,167,502, July 25, 1939.*

AMINOPHYLLINE AND ASTHMA

From July 1938 to May 1939, according to Carr, forty-one patients with acute bronchial asthma were treated at Bellevue Hospital. Twenty-two of these were refractory to epinephrine and their acute attacks were treated by intravenous injections of aminophylline. The aminophylline was given undiluted, 0.48 Gm. in 2 cc. of aqueous solution. The entire amount was administered intravenously within two minutes. About a third of the patients showed one or more of the following symptoms: dizziness, nausea, retching, vomiting, "pounding of the head," burning in chest and head" or head and chest pain. No alarming effects were observed, and neither did striking or permanent effects of pulse or blood pressure ensue. The duration of disease varied from one to twenty years. Half of the patients obtained immediate relief. The effect in others was evident in from five to thirty minutes. The duration of benefit was from one hour to the absence of a recurrence over a period of days. It was never necessary to give more than one injection within a period of less than two hours. The effectiveness of epinephrine may have been restored in view of the fact that half of the patients required only one injection, were subsequently discharged and apparently did not have another refractory attack. Eight of the twelve patients who received intravenous injections of aqueous solution of aminophylline for acute asthma without a history of its previous use obtained immediate and striking relief, and four obtained relief within ten minutes. Minor toxic symptoms occurred among one third of the patients. All stated that they experienced greater relief than that given by epinephrine during previous acute attacks. Eight patients who had been given epinephrine by the ambulance surgeon or admitting physician were all benefited when aminophylline was given from twenty-five minutes to twenty-four hours later. Three had immediate relief and the others obtained relief in from twenty to fifty minutes. Three had minor toxic symptoms. Two patients had asthma of an allergic type, and these two responded less favorably.—*J. Lab. Clin. Med. vol. 25, p. 1295.*

SULFATHIAZOLE LOCALLY

Spink and Paine applied sulfathiazole directly to the staphylococcic lesions of sixteen patients. Staphylococcus aureus was isolated from every lesion. Depending on the site of the lesion, immobilization and elevation of the infected area were used to enhance circulation. Adequate surgical drainage and debridement of devitalized tissue were utilized. Sulfathiazole was applied directly to the lesions to permit a much higher local concentration of the drug than could be obtained when given orally. Acutely ill patients were also given sulfathiazole orally. This procedure was directed against a possible bacteremia and to prevent an extension of the primary focus. To prevent the inhibitory action of bacteria, exudate and necrotic tissue on sulfathiazole the wounds were irrigated frequently with warm saline solution and, following each irrigation, sulfathiazole was used in the wound in crystal form, 1 per cent. aqueous solution or as wet packs. In a few cases, particularly those in which there were carbuncles, irrigations with hypochlorite solution aided considerably in removing purulent and sloughing material. The results were as follows: Of the four cases of carbuncle, three granulated in without cutaneous grafts and the results in the other one is doubtful; the six operative wound infections healed and became sterile; in one, decubitus ulcer grafts were successful after two previous attempts had failed, one corneal ulcer healed and became sterile, one of two chronic osteomyelitis lesions showed extensive osseous repair and the result in the other is too recent to draw any conclusion, the number of organisms was reduced in one pyopneumothorax but the cavity is not sterilized and there was improvement of the subcutanous abscess but the patient died of leukemia.—*Minn. Med. vol. 23, p. 615.*

SULFANILYLGUANIDINE

In a study of various sulfonamide derivatives Marshall and his colleagues found that sulfanilylguanidine is fairly water soluble but is poorly absorbed from the intestine. This makes possible a high concentration of the drug in the intestine and a low concentration in the blood and tissues, a situation somewhat analogous to the use of sulfonamide derivatives as urinary antiseptics. They present data on the preparation, structure, chemical and physical properties, pharmacology, experimental therapy and possible clinical uses of this drug. The antibacterial activity of sulfanilylguanidine suggests that it or some other derivative having similar properties may prove useful in the treatment of infections mainly or entirely localized in the intestine. From their experiments on dogs, mice and rabbits it appears that the drug given orally is no more toxic and is probably less toxic than sulfapyridine and sulfathiazole. The drug is conjugated in the mouse, rabbit and man but not in the dog. It passes into the spinal fluid much more slowly than do sulfanilamide and sulfapyridine. It rapidly penetrates the tissues with the exception of the brain. Sulfanilylguanidine is somewhat less effective against a beta-hemolytic streptococcus infection in mice than is sulfanilamide, but it is as effective as sulfapyridine against pneumococcic infection in mice. In vitro studies show that it is as or even more effective than sulfanilamide against various bacteria. The concentration of coliform bacteria in the feces of mice can be reduced by its administration. The pharmacologic properties of the drug suggest that it may prove effective in the treatment of bacterial intestinal infections in man. However, evidence of its therapeutic capabilities can be obtained only by a careful clinical study. The solubility of the drug, accompanied by its low absorption from the intestine, would appear to constitute its chief advantage over the sulfonamide derivatives in use at present. The rapid excretion of the drug is a definite advantage. Acetylation of sulfanilylguanidine is no disadvantage, since acetylation does not occur in the intestine, but probably increases the toxicity of the drug.—*Johns Hopkins Hosp. Bull. vol. 67, p. 163.*

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ADVANCING THERAPY

ANTI-BALDNESS VITAMIN

An anti-baldness, anti-dandruff vitamin has been discovered by Dr. Earl R. Norris and Dr. James Hauschildt, of the University of Washington.

Mice, not men, are the creatures on which the discovery was made. There is no hint in the announcement of the discovery (*Science*, Oct. 4), that the vitamin will prevent or remedy dandruff and baldness in man. If man is more like the rat than the white mouse, his chances of being helped by the new vitamin are nil, because only white mice, so far as is now known, need this vitamin to grow, stay healthy and keep their hair.

The new vitamin is a member of the B family of vitamins and is present in yeast and liver. Study of its properties is now in progress.—*Science News Letter, October 19, 1940.*

PURIFIED HORMONE

Purification of the luteinizing hormone from the pituitary gland in the most powerful concentration obtained thus far, from 100 to 200 times more active than any similar substance extracted from the body's master gland, was reported before the annual Autumn meeting of the National Academy of Sciences at the University of Pennsylvania. The luteinizing hormone plays a vital role in the process of procreation and without it no child-bearing could take place.

The report was presented by Dr. Samuel Gurin, Professor Carl Bachman and Professor D. Wright Wilson, of the University of Pennsylvania.

For many years leading investigators on the glands in many parts of the world have been seeking to obtain a pure concentration of the luteinizing hormone secreted by the anterior lobe of the pituitary gland.

In August a team of research workers from the Rockefeller Institute for Medical Research, New York, and the Squibb Institute for Medical Research, New Brunswick, N. J., reported the isolation of a pure protein from the pituitary with high luteinizing properties. However, it was reported today, the substance isolated by the Rockefeller-Squibb group was entirely different from the one obtained by the University of Pennsylvania team, the latter being by far the more active and having a smaller molecular weight than the former.

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The luteinizing substance purified at the University of Pennsylvania, it was reported, has been determined through physical and chemical studies to be a glycoprotein, that is a protein combined with sugar.

The carbohydrate component constitutes 15 per cent. of the purified hormone, two-thirds of the carbohydrate being a form of sugar known as galactose and the remaining third being a sugar-compound of the group known as hexosamines. It has a minimum molecular weight of about 80,000.

SULFATHIAZOLE FOR GONORRHEA

Culp used sulfathiazole in the treatment of thirty-eight male patients with gonococcic urethritis. Twenty-one of these have been followed regularly since the drug was discontinued and seventeen of them have had no recurrence to date and appear to be cured. There were two frank failures and one recurrence. Anemia developed in one patient and he was unable to tolerate sulfathiazole. Six of the seventeen apparent cures were of patients with both anterior and posterior urethritis, some of which had further complicating manifestations of gonorrhea. Two of the cured patients had failed to improve on sulfanilamide. Most of the patients received 1 Gm. of sulfathiazole every six hours for an average of 9.3 days. The discharge disappeared on an average of 2.7 days in those patients in whom it was limited to the anterior urethra and on an average of 5.2 days when complications were present. Eight of the thirty-eight patients appeared to be well but failed to return after sulfathiazole was discontinued. The dosage and duration of their treatment was about the same as in the well followed cases. Urethral discharges disappeared on an average of 2.8 days, and all the patients were free from gonococci when last seen. The remaining nine patients have had disappearance of their dis arge and their urethral cultures are negative, but they are still taking the drug. Six of these had posterior involvement and three involvement limited to the anterior urethra. In the latter group the discharge disappeared in two days and in the complicated cases the duration of exudate averaged 4.7 days. Only two instances of toxicity (one of anemia and one of leukopenia) were encountered, although the blood and urine of every patient were analyzed frequently. The best results were obtained with those patients who received 1 Gm. of sulfathiazole every six hours until the voided urine was free from shreds. To avoid urolithiasis and leukopenia the fluid intake was intentionally not reduced. The blood level of sulfathiazole only once reached 4 mg. per hundred cubic centimeters. Generally it was between 2.5 and 3.5. A higher blood concentration of the drug does not appear necessary and limitation of fluids should be avoided. Sulfathiazole apparently is of great value in the treatment of acute gonorrhea (posterior and anterior) and it compares favorably with other sulfonamide derivatives.—*J. Urology, vol. 44, p. 367.*

SULFONAMIDE DERIVATIVES IN WAR

The British War Office has issued a memorandum on the use of the sulfonamide derivatives for the guidance of army medical officers, which, however, is of wider interest, for it has been compiled by the leading experts of the day and is the last word on the subject. It is recommended that sulfapyridine should be given in gonorrhea, cerebrospinal fever, pneumococcic infections, staphylococcic septicemia and gas gangrene. But as supplies are not unlimited, economy should be observed. Sulfanilamide should be the drug of choice in the prophylaxis of wound infection and the treatment of erysipelas, cellulitis, meningococcus carriers, the acute phase of wounds known to be infected with hemolytic streptococci, follicular tonsillitis, otitis media and Bacillus coli urinary infections. But sulfanilamide is inactive against all pneumococci excepting type III and has little action on staphylococci. The principle of effective treatment is to obtain a high blood concentration as rapidly as possible and to maintain this for a time. As the drugs are rapidly excreted, administration should be four hourly day and night. For maintaining a steady blood concentration the oral route is the best and should ordinarily be followed. But when swallowing is impossible, when gastric upset prevents absorption and in neglected cases in which no time must be lost a soluble preparation for injection is valuable. For established or developing infections, courses of treatment should seldom exceed ten days. A further course should be prescribed only in exceptional circumstances and with precautions against granulocytopenia. As a rule when infection is amenable to these drugs the result is rapid.—*J. A. M. A. vol. 115, p. 1291.*

CALCIUM LEVULINATE

There has been a long-felt need in calcium salt therapy for a calcium carrier that was stable in solution, gave a high concentration of calcium ion in the ampoule solution, and was not irritating to tissues. Oral administration of calcium is often too slow or ineffective while intravenous and intramuscular injections sometimes result in inflammation or ulceration. These and other deficiencies have been observed with the calcium salts of inorganic acids and also, though to a lesser extent, with the salts of those organic acids that have as yet attained much employment in medicine. In recent years studies of the safety and clinical effectiveness of the normal calcium salt of levulinic acid have drawn attention to this salt and to its many advantages over other calcium compounds.

Its high calcium content (13.1%) compares with that of calcium lactate (13.0%) and more favorably with that of calcium gluconate (8.9%).

Because of its high solubility, stable solutions can be obtained with concentrations as high as 30% or over at room temperatures. Calcium gluconate, in contrast, tends to precipitate even in 10% solution in ampoules.

The solutions are stable at 100°.

The solutions are neutral.

Although it leaves an alkaline ash it does not produce alkalosis. It does not cause acidosis except when used in excessively large doses.

The ill effects often observed with other calcium salts, such as nausea, loss of appetite, ulceration, inflammation, or diarrhea, are either entirely absent or markedly reduced.

Calcium levulinate is available from Paul Lewis Laboratories, Inc., 918 N. Fourth Street, Milwaukee, Wisc.

ANTIMONY SODIUM THIOGLYCOLLATE

The toxicity of antimony sodium thioglycollate (S.A.T.) and antimony thiolgycollamide (T.A.T.) was compared with tartar emetic. S.A.T., like tartar emetic, was found to be more soluble and stable than T.A.T. and was more compatible with blood than tartar emetic, or T.A.T. S.A.T. and T.A.T. are very irritant, but less so than tartar emetic, and cannot be adopted for subcutaneous or intramuscular injection. A comparison of the lethal dose (LD_{50}) showed that S.A.T. and T.A.T. are slightly less toxic than tartar emetic by subcutaneous and intravenous injection. Antimony in the form of S.A.T. is slightly less toxic than T.A.T. On repeated dosage T.A.T. was better tolerated than S.A.T. by subcutaneous and intravenous injection. In dogs, by intravenous injection, S.A.T. was tolerated about twice as well as tartar emetic. Tartar emetic was very much more depressant than S.A.T. or T.A.T. in its effect upon the circulation. The chronic toxic effects by repeated injections were much less pronounced with S.A.T. and T.A.T. than with tartar emetic. Antimony sodium thioglycollate has the advantage over tartar emetic and antimony thiogltcollamide in having a higher content of antimony with a relatively lower toxicity.—*C. Pak. and B. E. Read, Chinese J. Physiol. vol. 14, p. 375.*

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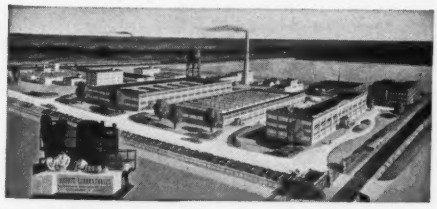

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READERS'

LIPSTICK: As a subscriber to your magazine we take the liberty to ask your advice on the following matter. We are using a lipstick formula but the product we get is not indelible enough and stays on the lips for only a short while. Could you therefore suggest a change in the formula to make the lipstick more indelible? Sweden.

The amount of bromo acid present in your stick is sufficient to give a good stain but only if the color is properly dissolved. Castor oil is generally used for this purpose but the quantity present in your formula is too small. We suggest that you decrease the amount of vegetable oil present by fifteen parts and increase the castor oil correspondingly. It may also be useful to add a few per cent. of a bromo acid solvent such as butyl stearate or one of the trade named products recommended for the purpose.

FOAMING AGENT: We have a definite application for one of the newer sulfonated alcohol wetting-detergent agents of a slight acid nature but find we will have to incorporate some kind of foaming agent. Would you kindly suggest some item that may fill this need. We would not like to use anything of an alkaline nature as we wish to maintain the acid characteristic, and would not like to use a soap. The item need not have any detergent qualities, we just need suds. We find your magazine indispensable in our business and constantly refer to it. Denver.

Saponin is a very good foaming agent practically devoid of detergent power and should suit your purpose admirably. Among the wetting agents that might also be used for the same purpose are several synthetic products that have been mentioned from time to time in these pages.

SOYA BEAN OIL: Could you recommend a preservative for soya bean oil used in creams? Why isn't more of this oil used in cosmetics? Indianapolis.

Probably soya bean oil is not used more because it often has an odor difficult to cover and more likely because it is a member of the class of semi-drying oils which gradually thicken with age. As good a preservative as any would be a mixture of equal parts of hydroquinone and methyl parahydroxybenzoate. Use about one-tenth of one per cent. of this mixture dissolved in the oil.

ANTI-FREEZE MIXTURE: We have been using glycerin as an anti-freeze mixture and notice that rust is produced in a short time. Can you advise us as to the best material for use as an inhibitor in this case? Ontario.

We try to restrict ourselves as much as possible to the drug and cosmetic field but in this case may be able to be of some assistance to you. Rust inhibitors are generally neutral or very slightly alkaline, water-soluble antioxidants. Probably about one per cent. of sodium sulfite dissolved in the water used for diluting the glycerin may serve your purpose. Anti-freeze mixtures on the market often contain patented inhibitors which are not necessarily more effective than sodium sulfite.

COLOR RINSE: We have been subscribers to your magazine for a number of years and at this time would like a little information from your technical department if such advice can be had from the information you have on hand. We have been thinking of putting a hair color rinse on the market and are wondering what types of bases are usually used for these rinses. Have tried citric acid but find that there is entirely too much stain imparted to the scalp if enough color is used actually to impart color to the hair. When the color content is reduced to where it will not color the scalp there seems to be but the slightest bit of a tint given to the hair—hardly enough to notice. St. Louis.

The whole problem of applying dyes to the skin and hair can be a very complicated one and textile, chemical and dyeing methods must be applied. As you will see, we are not saying this in order to avoid answering this question but will try to give general observations that you may be able to work out for yourself. Much will depend upon the character of the dye used and the acidity of the dye bath. Acid, basic, and direct colors must all be used from different types of baths. Some of these are slightly acidified, some are more strongly acid, and still others will require a weak acid with a buffering agent. You are limited to the drug and cosmetic list of approved colors. Concerning these you can get information from your suppliers as to the category in which the dye belongs and thus work out some approximation as to the proper acidity for the dye bath. Various manuals of textile dyeing should be available from your local libraries, and they should be of considerable assistance. We feel, however, that only a very light tint should be imparted to the hair.

QUESTIONS

HAIR DYES: We were very much interested in the note on hair dyes which appeared in your August issue. Can you give us any more specific information about the dihydric and trihydric phenols used in the mixture? San Francisco.

The most common dihydric phenols are resorcinol, hydroquinone, and catechol. Pyrogallol and phloroglucinol are examples of trihydric phenols. All of these compounds have been used in hair dyes with more or less success.

STATISTICS: We would like to obtain annual sales figures, if possible, for the following products, in dollars: tooth powder, gargle, mouth wash, nasal and throat spray. Any information you could give us on this would be appreciated. Detroit.

The only item in this list on which we can give you any sort of trustworthy estimate is tooth powder. We estimate that the annual sales of tooth powder (wholesale value) are valued at about $8,000,000.00.

LIQUID DENTIFRICE: Can you give me any information regarding a high quality liquid dentifrice and its formulation? Allentown.

Liquid dentifrices consist of the newer synthetic detergents dissolved in enough alcohol to make a clear solution with the addition of gum and glycerin for thickening. A typical formula would consist of detergent 1.0-3.0 parts, alcohol 10.0, flavor 1.0, tragacanth 1.0, glycerin 15.0, water to make 100 parts. The detergent must be selected from those that have been proven to be non-toxic. It is dissolved, along with the flavor, in the alcohol and the powdered gum tragacanth is stirred with this alcoholic solution. This mixture is then poured with stirring into the mixture of glycerin and water. Some of the newer products are apparently thickened to thin pastes by means of a sufficient amount of bentonite.

ATHLETES FOOT: Have you any suggestion on the formulation of a cream or ointment suitable for treating athlete's foot? Los Angeles.

An ointment consisting of one per cent. of mercury phenyl nitrate in an absorption base with forty per cent. water has been suggested for the treatment of ringworm of the toes. Probably as satisfactory as any is the standard Whitfield Ointment consisting of benzoic acid 6, salicylic acid 3, petrolatum 18, mineral oil 30, coconut oil 43.

LIQUID NAIL WAX: Our good friend Mr. Charles A. Gillespie of Villa Park, Illinois helps us out with a formula for a liquid nail wax which we give below:

Paraffin	5.0
Petrolatum	2.5
Ethyl acetate	5.0
Chloroform	87.5

We suggest that other solvents may be used in this mixture to avoid the characteristic and generally unpleasant odor of chloroform.

NAIL POLISH REMOVER: I am interested in a formula you suggest in your August issue for a nail polish remover containing a high boiling lacquer solvent. Will you kindly let me know how this is used and where I might purchase it? New York City.

Almost any of the intermediates to high boiling esters sold by alcohol companies can be used as they are as nail polish removers, or they may be diluted with an equal volume of alcohol. Butyl acetate is probably as good as any for this purpose but similar compounds with much less odor may sometimes be preferable. These include glycol and glycol ether esters.

PERMANENT WAVE CREAM: We are interested in obtaining a formula for a permanent waving cream containing lanolin. These creams are being widely used instead of lotions and we would appreciate any assistance you can give us in this matter. Havana.

A standard product of this type would consist of the following:

Lanolin	20.0
Absorption Base	20.0
Ammonia	10.0
Sodium sulfite	5.0
Sodium hydroxide	0.5
Water	44.5

The ammonia, sodium sulfite, and sodium hydroxide are dissolved in the water which is then incorporated in the mixture of lanolin and the absorption base at slightly above room temperature. It may be necessary to modify somewhat the ingredients and their proportions in the water but the general idea of these products is a water in oil cream in which the water phase consists of a concentrated permanent wave solution.

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Of The Drug and Cosmetic Industry, published monthly at Pittsfield, Mass., for October 1, 1940

State of New York, County of New York—ss

Before me, a notary public in and for the State and county aforesaid, personally appeared Thomas R. Farrell, who, having been duly sworn according to law, deposes and says that he is the Editor of The Drug and Cosmetic Industry, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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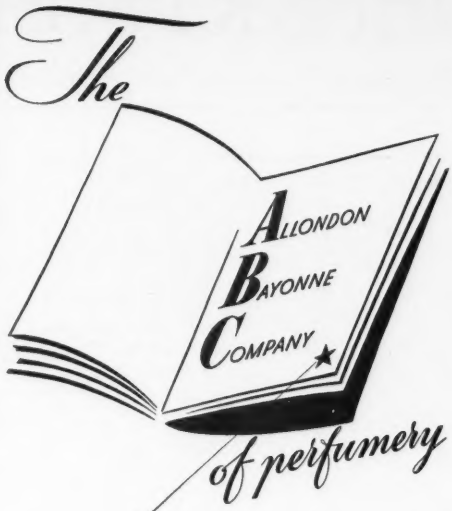
Thomas R. Farrell, Editor.

Sworn before me this 23rd day of September, 1940, Edward N. Mueller, Notary Public.

My commission expires March 30, 1941.



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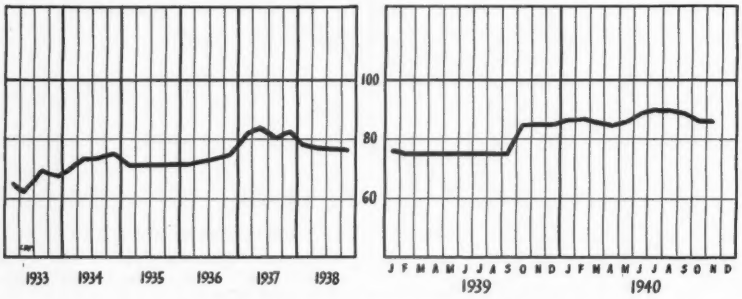
Almond oil, bitter 25c
Amber oil, Rectified 15c
Angostura bark 2c
Anise oil, USP 17c
Arnica flowers $1.00
Asafoetida 3c
Balsam Peru 5c
Belladonna leaves 10c
Bergamot oil $3.00
Bois de Rose, Braz. 10c
Buckthorn bark 19c
Cananga oil, Native 50c
Rectified 55c
Caraway oil 50c
Carnauba wax No. 1 2c
Cascara sagrada 1c
Cassia oil, Redist. 20c
Celery oil $4.00
Chamomile Flowers, Hung. 15c
Roman 60c
Citronella oil, Ceylon 4c
Java 6c
Coriander oil $2.25
Cumin seed, Morocco 2c
Dandelion root 10c
Dill oil 50c
Fennel oil 10c
Gentian root 7c
Geranium oil, African $5.25
Bourbon $4.25
Henbane leaves USP 90c
Henna leaves 16c
Horehound herb 1c
Japan wax 4c
Juniper berry oil $1.50
Lemon grass oil 25c
Mastic gum 80c
Menthol, Chinese 35c
Musk Tonquin $3.00
Oleoresin capsicum 10c
Olive oil, Edible 15c
Orange oil, W. I. 50c
Orris root, Flor. 20c
Verona 26c
Peppermint oil, Nat. 25c
Redist. 25c
Pinus Pimulio oil 90c
Psyllium seed, black 12c
Rosemary oil 5c
Saffron, Spanish $4.00
Savin oil $1.80
Senega root 3c
Senna Alex. 9c
Spearmint oil 10c
Stramonium leaves 16c
Valerian root 15c
Vanilla beans, Bourbon 70c
Mex. cuts $1.25
Mex. whole $1.25
Vetiver oil, Bourbon $2.50
Ylang Ylang oil, Bourbon $4.50

Down

Balsam Tolu 50c
Clove oil 10c
Ergot 5c
Eucalyptus oil 4c
Hemlock oil 20c
Iodine resublimed 40c
Ipecac root 10c
Jalap root 2c
Mercury, bichloride 20c
Calomel 25c
Red Precip. 42c
White Precip. 20c
Potassium iodide 25c
Spruce oil 5c
Turmeric root, Aleppy 1½c
Madras 1½c
Wahoo bark of root 3c
Wormseed oil 20c

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.

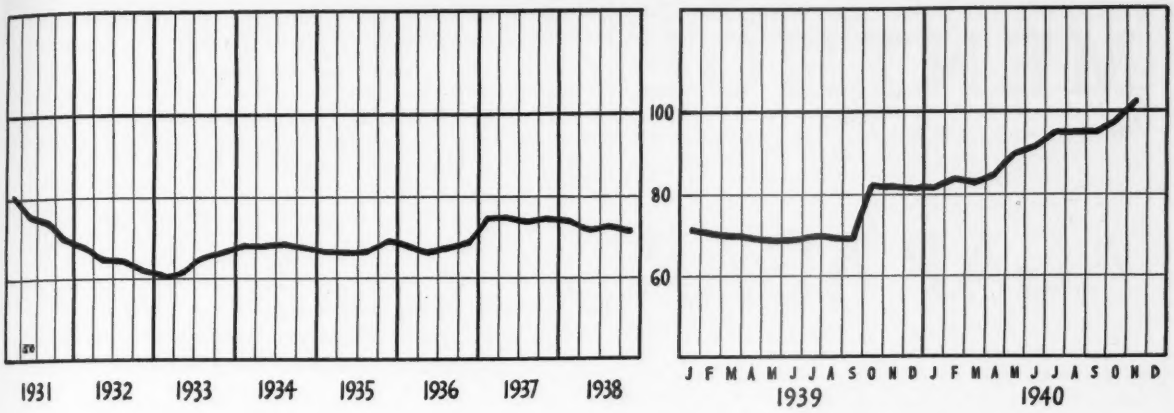


The cosmetic raw materials index was fractionally lower at 86.5 from the previous 86.9. Balsam Peru was 5 cents a pound lower at 70 cents; balsam Tolu was up from $1.35 to $1.85 and Japan wax was higher at 19 cents. Japanese menthol was an item of considerable interest. Although there was no price change during the past month the primary market continued very firm in spite of the fact that not one pound of menthol was purchased there in over a year by United States importers.

15 Botanicals—Weighted Price Index. 1926 = 100.

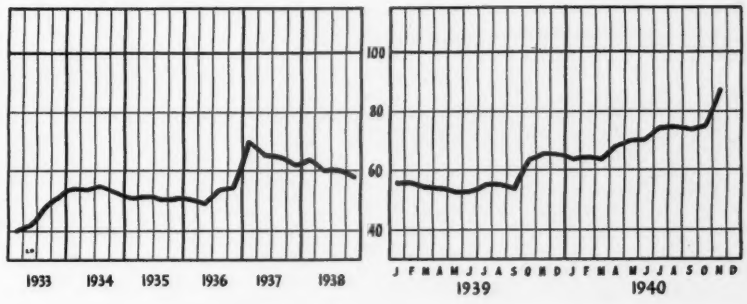
The botanicals index showed a sharp advance during the period from 165.2 to 171.0. Belladonna was up 10 cents a pound to 95 cents; cascara advanced 1 cent to 15 cents; gentian was 7 cents higher at 27 cents; and orris root moved forward to 60 cents. Ergot declined 5 cents to $1.70; ipecac was off 10 cents to $1.20 and balsam Tolu was also lower.

50 Raw Materials—Weighted Price Index. 1926 = 100.



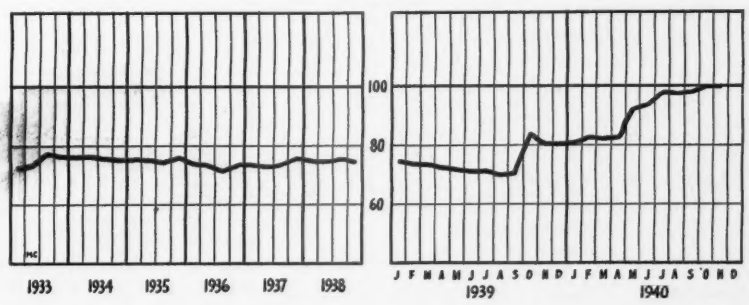
The price index of fifty commodities for November 1940 increased to 102.5 compared with 97.5 in the preceding month. The outbreak of war between Italy and Greece increased the tension in the Mediterranean and made it increasingly more difficult, if not impossible, to obtain supplies from countries bordering on that inland sea. It is now impossible to replace Greek olive oil. Spanish olive oil is under government embargo. Spanish essential oils are not being shipped to this country. French flower oils are unobtainable. The situation as a whole is discouraging.

15 Essential Oils—Weighted Price Index. 1926 = 100.



The essential oil index was up to 87.8 from the previous 74.9. Anise advanced from 83 cents to $1.00; bergamot was sharply higher at $11.50; Bois de Rose increased 10 cents in price to $1.70; Cananga was also sharply higher at $2.25; cassia increased 20 cents in price to be quoted at $1.55; citronella was strong at the new price of 36 cents; geranium was up to $9.00 a pound and peppermint to $2.65. Eucalyptus oil declined 4 cents to 68 cents.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



Medicinal chemicals index showed no change from 99.3 of the preceding month. These products are, for the most part, of a manufactured nature and are not as susceptible to economic and political developments in the world as are the products that generally come under the classification of commodities. Demand for medicinal chemicals continues good but supplies continue adequate to requirements.

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ROSE OIL

Bulgarian rose oil production during the 1940 season was delayed about a month by the prevailing cold and damp weather, the distillation taking place during June. Because of the same climatic conditions, the production of roses was the lowest recorded in many years, amounting to some 6,600,000 kilograms, as compared with an average annual production of 10,000,000 to 12,000,000 kilograms.

The production of rose oil was consequently reduced to some 1,600 kilograms as compared with 3,600 in 1939. In 1938 production of rose oil amounted to 1,690 kilograms and in 1937 to 2,850. The 1940 product, however, is reported to be of excellent quality and scent since the damp weather prevented evaporation.

As usual, the greater part of the rose oil was distilled by cooperative associations under the direct control of the Agricultural and Cooperative Bank of Bulgaria, whose seal is placed on the containers as a guarantee of the oil's purity. According to law, the Bank's control over the rose oil trade is still maintained and private distillers and exporters are required to obtain one-half of each export shipment from the stocks held by the Bank, the remainder being from their own stocks. The Bank has abundant reserves available from previous years and the fluctuations in the annual output are therefore of little significance.

Most recent developments in the Balkans would indicate that Bulgaria is in rather a difficult position in respect to the shipment of commodities to the outside world. Replacement of rose oil will naturally be subject to long delays and higher costs. If the major activity of the European War moves to Southern Europe as the present trend would indicate, supplies of rose oil will be cut off entirely. Domestic stocks, however, are sufficient to carry on for some time.

MERCURY

There has been no material change in the spot market price of mercury metal during the current trading period. Quotations now range from $170 to $172 a flask as to quantity. A slightly firmer tone at these price levels is said to prevail despite the fact that August statistics were not particularly favorable.

Domestic production of mercury in August amounted to about 3,500 flasks, or nearly double the rate in January, according to the Bureau of Mines. Exports dropped from 1,031 flasks in July to 633 flasks in August and imports continued nil.

Domestic consumption of the metal was reported to have totaled 2,100 flasks, so that the output at domestic mines amply provided for domestic requirements and for substantial exports.

Consumers' and dealers' stocks at the end of August were reported as approximately 12,900 flasks, compared with 12,000 flasks, on hand at the end of July. At the August rate of use stocks in consumers' and dealers' hands were equivalent to six months' requirements.

Producers' stocks are in addition to the inventories already mentioned and amount to more than another week's supply. Producers who report on a monthly basis to the Bureau of Mines indicated that they held 720 flasks at the end of August, compared with 592 flasks at the end of July. Consumption in August amounted to about 2,100 flasks, compared with 2,200 flasks in July.

With the Government's vast shipbuilding program it is believed that considerable quantities of mercury will be needed for the manufacture of mercury oxides for painting ship bottoms. In normal times the use of mercury oxide for marine purposes is said to be equivalent to about 1,200 flasks a year.

A new mercury mine in the southeastern part of Presidio County, within a few miles of the Rio Grande, has been opened. Situated about twenty miles west of the Terlingua mercury district in Brewster County, a large producer of the metal for more than thirty years. The new mine is producing considerable quantities of cinnabar, from which mercury is smelted in a furnace which has been installed on the property.

Discovery of the new mine has stimulated prospecting for other outcroppings of cinnabar ore in the upper Rio Grande border region.

MENTHOL

The spot menthol market was very quiet from a consumer demand standpoint. This was not the case with the primary markets, however. Conditions in Japan were if anything, more firm than has been the case in well over a year. Their asking price would represent a cost of $4.50 delivered in New York, duty paid. This is just $1.00 a pound more than is being paid for this grade of menthol by manufacturing consumers here. The Japanese attitude toward menthol is still the subject of much discussion as it is reported that not so much as a single pound of menthol has been sold in this market in one year. The loss of other foreign markets through present trade restrictions should also, long before this, have weakened the Japanese position.

Chinese menthol was advanced on spot during the current trading period with price ranges now at from $3.35 to $3.40 per pound. It should be reported, however, that there were sellers at that price with few takers. Arrivals of menthol from China have been regular, subject, of course, to increased war risk insurance rates and to higher freight rates.

OLIVE OIL

The invasion of Greece by Italian troops was immediately reflected in the market on edible olive oil, with the price rising promptly to $2.75 a gallon in bond for drums. There was considerable activity on the buying side for goods available, though a number of sellers were out of the market. Some Spanish representatives were said to be anxious to cover, as Spanish case goods olive oil is about unobtainable now.

The invasion of Greece dashed hopes in the olive oil trade here that the Greek Government might soon relent its prohibition on exports of edible drum olive oil.

Under present circumstances, of course, all shipments are out of the question. However, there are certain moderate quantities of Greek oil afloat for this country, including not only case goods, but drum oil bought prior to the export ban placed in effect some two months ago on drum oil.

While edible oil was quoted during late trading by leading sellers at $2.75 in bond, it was made plain that this price was subject to change at any moment, and that there was every reason to expect that further advances might come at any time. Supplies in the hands of the trade are moderate to light.

Denatured olive oil offerings were withdrawn entirely since new supplies probably will be very slight as long as Greece, Italy and North Africa are involved in the war. Aside from cargo now afloat new supplies may be limited to what Spain and Portugal can spare by substituting other vegetable oils for home consumption.

MERCURIALS

Leading manufacturers of mercurials announced the following price reductions effective immediately on all orders, for spot delivery only, no contracts: Corrosive sublimate, U. S. P. Granular or powder, 100 lb. drums, $2.04 per lb., 25 lb. drums, $2.05 per lb. Mercury bichloride (corrosive sublimate) U. S. P. crystals is 15c a lb. higher than U. S. P. granular or powder. Calomel is now offered at $2.70 per pound in 350 lb. kegs and $2.71 per pound in 25 lb. drums. The new schedule on mercury-ammonium chloride or white precip. is $2.54 a pound in 100 lb. drums and $2.56 a pound in 25 lb. drums. Red precip. N.F. powd. is $3.06 a pound in 100 lb. drums and $3.08 a pound in 25 lb. drums. Mercury oxide yellow is listed under the new schedules at $3.18 a pound in 100 lb. drums and $3.20 a pound in 25 lb. drums.

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BOTANICALS

In view of the situation prevailing regarding the possibility of replacing many crude drugs of foreign origin, an encouraging report has been received from British East Africa. The Systematic Botanist, East African Agricultural Research Station, Tanganyika Territory, states there is available for export an almost unlimited number of therapeutic botanicals there. The list includes those species of drug plants native to or already introduced into East Africa, and those other East African plants which by reason of their botanical relationship might be acceptable substitute sources for drugs normally derived from other species. Some of the drugs used in the United States and available in East Africa include cinchona, belladonna, Chenopodium ambrosioides, Coriandrum sativum, stramonium, eucalyptus, nox vomica, Hyoscyamus niger, mate (Ilex paraguayensis S. St. Hil.) and papainum (papain). The United States has not in the past imported crude drugs and botanicals from British East Africa, although the insecticide, pyrethrum flowers, are received in comparatively large quantities annually.

ITALY

Italian commodities such as bergamot oil, lemon and orange oils, orris root and stramonium became increasingly scarce in the spot market as the period of English blockade was prolonged. Prices have advanced sharply, in some cases such as bergamot and lemon oil quotations being merely on a nominal basis. Bergamot oil is not produced in any country other than Italy. Importers here were asking from $11.50 to $11.75 per pound but, as it may be a very long time before any replacements could be affected, the market was subject to further advances without notice. Lemon oil is nominal at from $4.75 to $5.50; orange is quoted at $8.25 to $9.25. The Italian citrus oils do not present so serious a problem, as domestic sources produce in large quantities, and there are also other sources. Orris root Florentine is scarce on spot and prices were advanced to from 65c to 70c per pound, the Verona grade also being much higher at from 60c to 65c. Stramonium almost doubled in value during the past month, now being offered from at 40c to 45c a pound.

NICOTINIC ACID

The active demand which has developed for nicotinic acid U. S. P. and nicotinamide, has established production costs on a lower basis so that manufacturers have been able to reduce prices to the following basis: Nicotinic acid U. S. P. in 50 lb. lots $10.50 a pound; in 100 lb. lots $10.00 a pound. Nicotinamide (Nicotinic acid amide) in 25 lb. jars $25.00 a pound, in 5 lb. quantities $25.50 a pound.

FRANCE

Products from France are becoming increasingly scarce here. Every effort is being made to effect delivery of flower oils and similar products to the United States but the difficulties are very great and no success has as yet been reported. Serious shortages and high prices for practically all oils originating in France is inevitable. Products from Madagascar such as geranium oil, Bourbon vetiver, Bourbon vanilla, ylang ylang, Madagascar cloves and clove oil are practically unobtainable here. Geranium oil from the Bourbon Islands is scheduled at a price range of from $9.00 to $9.25 a pound, although it would probably be impossible to purchase more than a hundred pounds or so at these prices. Vetiver is in a similar position with spot quotations up to $9.00 prevailing. The price range of Bourbon vanilla is tentatively $8.25 to $8.75 a pound but as importers are limiting deliveries to established customers only, and then in small quantities, the market can be said to be nominal. Ylang ylang Bourbon also advanced sharply to a quoted price range of from $8.00 to $8.50 a pound. All these quotations are mentioned here merely to indicate the trend of French source materials. With price changes becoming effective day by day it is impossible to state definitely what manufacturing consumers would have to pay for prompt delivery from spot stocks.

SPAIN

Spain is the source of a number of raw materials used in the manufacture of drug and cosmetic products. Ergot seems plentiful at the present time and offers are made at favorable prices. Shipments have been arriving here regularly with the result that the market in New York has been easy for several months and this trend has been carried into the current trading period. Spot price of ergot of rye is $1.70 to $1.85 a pound as to quantity purchased. Olive oil, however, is unobtainable in Spain. This is an edible oil product, the scarcity of which is widespread throughout all Europe. Spain has instituted an embargo on all exports of olive oil. Spanish saffron also reached a new high price of $27.00 a pound. Spanish essential oils are in a similarly difficult position, although this is a little more difficult to understand. The fact remains, however, that Spanish oils are not being received in this country in quantities sufficient to cover replacement requirements. Reports indicate that Germany is buying up large quantities of Spanish essential oils, although what use Germany intends to make of them is unknown, as her export business in products, the manufacture of which requires these oils, is nil. The absence of regular shipments of pennyroyal, rosemary, and thyme oils from Spain resulted in advances in these products during the past month.

VANILLA

Particularly sharp price advances featured the spot market for all grades of vanilla during the current trading period. It was predicted earlier in the year, long before the collapse of France, that Bourbon beans would be scarce this year. The Bourbon situation has, of course, been severely aggravated by more recent developments. Other grades of vanilla beans have been forced up, not only by the position of Bourbons, but by a good consuming demand which set in when prices in general were at the $6.00 level.

The following price schedules now prevail: Vanilla beans Bourbon $8.25 to $8.75; Mexican cuts $8.25 to $8.50; Mexican whole beans $8.50 to $8.75. Bourbon quotations are merely a matter of record as the market is practically in a nominal position.

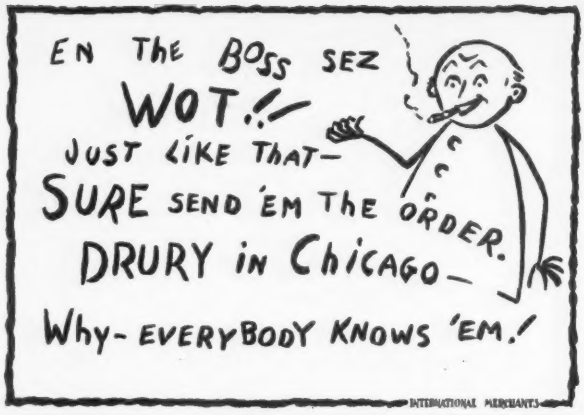
The future possibilities of obtaining replacement stocks from either France or direct from Madagascar, are not promising. It is therefore necessary for importers to reserve stocks to take care of normal requirements of the consuming trade.

Statistics on the production and consumption of vanillin in the United States indicate the growing importance of this product. A reflection of the larger 1939 output totaled 608,614 pounds, compared with the 1938 production of 465,077 pounds. Sales of vanillin in 1939 rose to 604,972 pounds ($1,198,153) from 1938 sales of 454,948 pounds ($1,009,227). The 1939 unit sales value dropped to $1.98 from $2.22 in the previous year.

IODINE

A feature of the fine chemical market was the reduction of 25c and 40c per pound in potassium iodide and iodine resublimed, respectively. The reduction, which is the first change in some time, establishes the market for potassium iodide U. S. P. at $1.20 per lb. in 250 lb. drums for both crystal, granular or powder grades. The market for iodine resublimed U. S. P. in 25 lb. jars is $1.75 per pound under the new schedule with $1.85 per pound being asked in 5 lb. lots. Prices quoted are for prompt shipment only, no contracts being entered.

Suppliers attribute the decline in prices to competitive conditions that have recently developed in the market.



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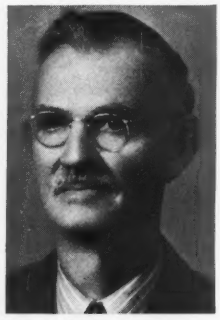

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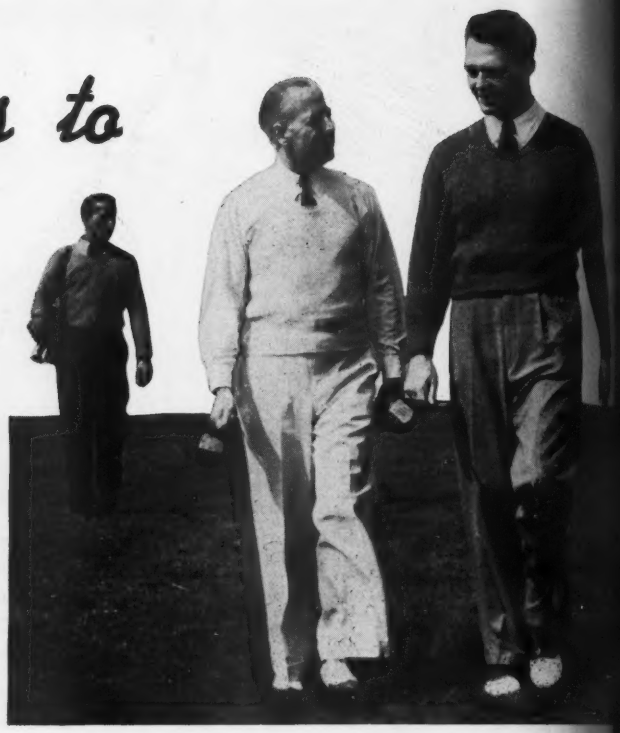

By Ewing Galloway, N. Y.

Scene—The golf course at White Sulphur Springs.

Jim Ross, a manufacturer of pharmaceuticals who markets his private brand of U.S.P. White Mineral Oil, talking to his friend
Bob Black, on their way back to the Club.

Mr. R—"Boy, it's a relief to get away from my desk for a few days—meeting the gang down here and shooting golf takes my mind off my worries."

Mr. B—"Worries, Jim?"

R—"Plenty. Take our Mineral Oil business for instance. First we build up a pretty good trade on Russian Oil. Then when the trouble started in Europe, we couldn't get Russian Oil. That was bad—somehow or other people weren't as fussy about Russian Oil as they seem to be about American Oil."

B—"Why let that bother you when you can get American White Mineral Oil that's certainly the equal of Russian—in fact, I think it's lots better than any imported product."

R—"Sure, but try and find a reliable source of supply. We tried it too. The first few drums I bought were O.K.—then the trouble started. I got complaints from the drug stores, who got *their* customers' kicks about odor and taste. What else could I do then except take the bottles of oil back and pocket the loss?"

B—"Well, Jim—I'm no wizard, but you make me feel like one—"

R—"Waddaya mean—wizard—how?"

B—"I've licked my white oil problems—and they stay licked. There used to be a time when I'd worry whether our bottled oil would stay sold or whether we'd have kick-backs and complaints from the drug stores too. That was before I switched to Sonneborn—"

R—"And you're going to tell me that you haven't had any trouble since?"

B—"Believe it or not, skeptic—that's what I'm telling you. When we send Sonneborn an order for their Heavy White Mineral Oil and say 'same as last,' no matter whether it's a tank car, a carload, or just a few drums, we know that what they ship us will definitely be same as last—our experience and their control laboratories show that I'm right. Net result: Our customers have absolute confidence in our products—and we're sitting pretty in the bottled White Oil business—thanks to Sonneborn."

R—"Well, Bob, you've earned the drinks—they're on me this time. I'll take your tip when I get back. It will mean one thing less to worry about when we switch to Sonneborn."

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